MICHIGAN STATE
UNIVERSITY

March 30, 2021

Mr. Brad Myott
EGLE – Air Quality Division
Constitution Hall, First Floor South
525 West Allegan Street
Lansing, MI 48933

**RE: Renewable Operating Permit (ROP) Renewal Application**
**Michigan State University (SRN: K3249)**

Dear Mr. Myott:

Michigan State University (MSU) is submitting the enclosed Renewable Operating Permit (ROP) Renewal Application for the MSU East Lansing Main Campus and the T.B. Simon Power Plant. MSU is operates in accordance with ROP No. MI-ROP-K3249-2016a, issued on October 21, 2016 and revised on March 7, 2017. The ROP contains two (2) sections:

- Section 1 – MSU Main Campus
- Section 2 – T.B. Simon Power Plant

As required by R 336.1210(9) of the Michigan Air Pollution Control Rules, MSU must submit an administratively complete ROP renewal application not more than 18 months, but not less than 6 months, prior to the expiration date of the existing ROP. As the existing ROP is set to expire on October 21, 2021, the ROP renewal application must be submitted and deemed administratively complete by April 21, 2021.

**Section 1 – Main Campus**

MSU's Main Campus consists of the Farm Lane and Veterinary Diagnostic Laboratory (VDL) incinerators; one (1) animal crematory; three (3) engine test cells/test stands; a sterilization process; a waste storage facility; an anaerobic digester that routes biogas to an adjacent reciprocating internal combustion engine (RICE) and flare; paint spray booths; parts washers; various emergency and nonemergency RICE, and numerous exempt boilers.

Since issuance of ROP No. MI-ROP-K3249-2016a, MSU obtained Permits to Install (PTIs) and installed additional exempt equipment that have not yet been incorporated into the ROP.

- PTI No. 68-17A was issued for administrative updates to MSU's Farm Lane Incinerator
- PTI No. 99-17 was issued for the installation of one (1) new sterilizer to replace the existing unit located at the Veterinary Medical Center
- MSU acquired the Biotechnology Institute (BI) building located at 3900 Collins Road, which operates in accordance with two (2) PTIs to be incorporated into the ROP (General PTI No. 127-07 and PTI No. 575-85)

- MSU installed various exempt equipment, including two (2) 755-horsepower (HP) emergency diesel-fired RICE located at the Facility for Rare Isotope Beams (FRIB), as well as other small engines and boilers

A complete summary of permit and equipment changes is provided in the enclosed ROP Renewal Application and Mark-up ROP Conditions.

**Section 2 – T.B. Simon Power Plant**

MSU's T.B. Simon Power Plant is a cogeneration facility that provides electricity and steam (for heat) to the Main Campus. The plant operates four (4) natural gas-fired boilers and one (1) natural gas-fired combustion turbine generator (CTG) equipped with a duct-fired heat recovery steam generator (HRSG). MSU is also in the process of commissioning three (3) natural gas-fired RICE that were recently installed adjacent to T.B. Simon.

Since issuance of ROP No. MI-ROP-K3249-2016a, MSU obtained two (2) PTIs that have not yet been incorporated into the ROP:

- PTI No. 75-14C was issued for the removal of the remaining coal-firing capabilities at Unit 4 and T.B. Simon
- PTI No. 139-18 was issued for the installation of natural-gas fired RICE that are currently being commissioned (startup occurred in November 2020) and a package boiler for additional steam capacity (not yet installed)

The ROP Renewal Application, including ROP Application Certification Form (C-001) and supporting documentation, are enclosed. If there are questions regarding this ROP Renewal Application, please contact Mr. Thomas Grover, CHMM at (517) 355-6651 or Ms. Rhiana Dornbos, P.E. of NTH Consultants, Ltd. (NTH) at (517) 702-2953.

Sincerely,

Dan Bollman
Vice President for Strategic Infrastructure
Planning and Facilities

cc: Mr. Dan McGeen, EGLE – AQD
Mr. Thomas Grover, CHMM, MSU
Ms. Sherri Jett, MSU
Ms. Amanda Groll, MSU
Ms. Rhiana Dornbos, P.E., NTH
EGLE-ROP@michigan.gov

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) |
|---|---|---|---|---|
| K3249 | 8221 | 611310 | MI-ROP-K3249-2016a | Section 1 |

Source Name: Michigan State University

Street Address: 4000 Collins Rd., Suite B20

| City | State | ZIP Code | County |
|---|---|---|---|
| Lansing | MI | 48910 | Ingham |

Section/Town/Range (if address not available):

Source Description: Michigan State University (MSU) is a public research university. Section 1 of MSU's ROP includes the Main Campus that consists of two (2) pathological waste incinerators, one (1) animal crematory, three (3) engine test cells, an ethylene oxide sterilization process, a waste storage facility, a digester gas-fired engine and flare, paint spray coating booths, parts washers, various emergency and nonemergency engine generators, and numerous boilers.

☐ 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) |
|---|---|
| Michigan State University | Section 1 |

Mailing address (☐ check if same as source address): 4000 Collins Rd., Suite B20

| City | State | ZIP Code | County | Country |
|---|---|---|---|---|
| Lansing | MI | 48910 | Ingham | 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: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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 | |
|---|---|---|---|---|
| Thomas Grover, CHMM | | | Environmental Compliance Officer | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| 4000 Collins Rd., Suite B20 | | | | |
| City | State | ZIP Code | County | Country |
| Lansing | MI | 48910 | Ingham | USA |
| Phone number | | E-mail address | | |
| 517-355-6651 | | grovert@msu.edu | | |

| Contact 2 Name (optional) | | | Title | |
|---|---|---|---|---|
| Mary Lindsey | | | | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| 4000 Collins Rd., Suite B20 | | | | |
| City | State | ZIP Code | County | Country |
| Lansing | MI | 48910 | Ingham | USA |
| Phone number | | E-mail address | | |
| | | lindseym@msu.edu | | |

### RESPONSIBLE OFFICIAL INFORMATION

| Responsible Official 1 Name | | | Title | |
|---|---|---|---|---|
| Dan Bollman | | | Vice President for Strategic Infrastructure Planning and Facilities | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| 1147 Chestnut Road, Room 101 | | | | |
| City | State | ZIP Code | County | Country |
| East Lansing | MI | 48824 | Ingham | USA |
| Phone number | | E-mail address | | |
| 517-355-3366 | | dbollman@ipf.msu.edu | | |

| 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: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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)**

Dan Bollman, Vice President for Strategic Infrastructure Planning and Facilities

***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.***

David J. Bollman 3-30-21

**Signature of Responsible Official** **Date**

| SRN: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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)<br>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<br>☐ 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?<br>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.<br>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?<br>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.<br>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.<br>Is an Acid Rain Permit Renewal Application included with this application? | ☐ Yes ☒ No<br>☐ Yes ☒ No |
| C8. | Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)?<br>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.<br>Is a CAM plan included with this application?<br>If a CAM Plan is included, check the type of proposed monitoring included in the Plan:<br>1. Monitoring proposed by the source based on performance of the control device, or<br>2. Presumptively Acceptable Monitoring, if eligible | ☐ Yes ☒ No<br><br>☐ Yes ☒ No<br><br>☐<br>☐ |
| 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?<br>If Yes, then a copy must be submitted as part of the ROP renewal application. | ☒ Yes ☐ No |
| C10. | Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable?<br>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. | ☐ Yes ☒ No |

☒ 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: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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)] |
|---|---|---|---|
| Various | Fuel-burning equipment used for space heating and water heating less than 50 MMBtu/hr | R336.1212(4)(c) | R336.1282(2)(b)(i) |
| Various | Propane and gasoline storage tanks less than 40,000 gallons | R336.1212(4)(d) | R336.1284(2)(b) |
| Various | Fuel-burning equipment used for preparing food for human consumption | R336.1212(4)(c) | R336.1282(2)(e) |
| | | | |
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Comments:

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

| SRN: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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?<br>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?<br>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:

**Part E3:** MSU has incorporated administrative changes/corrections to existing units through a PTI. However, the emission units were not changed, modified, or reconstructed.

**Part E4:** EU-ETO is no longer in use and has been replaced by the new EU-ETO2 (PTI 99-17).

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

| SRN: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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 |
|---|---|---|---|
| 99-17 | EU-ETO2 | One (1) ethylene oxide (EtO) sterilizer/aerator located at the Veterinary Medical Center on Wilson Road. The EtO sterilizer uses 100 percent EtO as a sterilant and is controlled by a catalytic oxidizer located on the roof of the building. | 2017 |
| 68-17A | EU-FLNRINC | A natural gas-fired consumat pathological waste incinerator (burn rate of 825 lbs/hr) that burns institutional waste co-fired with 10 percent or less medical/infectious waste. | 5/2/1975<br>6/13/1984 |
| 575-85 | EU-BIBOILER1, EU-BIBOILER2, EU-BIBOILER3 | Two (2) 400-hp boilers and one (1) 250-hp boiler capable of combusting natural gas and No. 2 fuel, used to provide heat, humidity, water heating and some process steam in support of various laboratory procedures within the building. | 1985 |
| 127-07 | EU-AMMONIA | A single anhydrous ammonia storage tank and any associated handling process. The nominal tank storage capacity shall not exceed 30,000 gallons. | 4/5/2007 |

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-Part F**

| SRN: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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 | EU-SPRAYBOOTH3 – Theatre scene shop spray booth and open spray area<br><br>EU-SPRAYBOOTH1 – New Physical Plant paint booth (replaced existing booth) | 2018<br><br>1/1/2020 |
| ☒ Rule 290 process with limited emissions | EU-BIPROCESS – Process room at Michigan Biotechnology Institute for production runs | 1985 |

Comments:

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

| SRN: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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.<br><br>**Part H3:** MSU will incorporate exempt engines and boilers into the ROP that are subject to federal NSPS and/or NESHAP requirements. Refer to the ROP MARK-UP contained in Appendix A. | ☒ Yes | ☐ No |
| H4. Does the source propose to add new state or federal regulations to the existing ROP?<br><br>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 |

| SRN: K3249 | Section Number (if applicable): 1 |
|---|---|

## 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |

## 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

**Part H15:** We are proposing a correction to the three (3) MBI boilers stack height (SVMBIBOILERS SC VIII.1) to 69.3 feet. It was discovered that the stacks are 8 inches shorter than the 70-foot stack height listed in PTI No. 575-85. EGLE has specified this could be updated in ROP Renewal. Refer to the ROP MARK-UP contained in Appendix A.

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

**Part H16:** The former DCPAH facility has been renamed to the Veterinary Diagnostic Laboratory (VDL). We are proposing to update the Emission Unit ID and description of EU-DCPAHINC to “EU-VDLINC” to reflect this administrative change. Refer to the ROP MARK-UP contained in Appendix A.

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-**

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: K3249 | Section Number (if applicable): 1 |
|---|---|---|

1. Additional Information ID
**AI-Part C, Part F**

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

**PART C**

**Part C1:** EU-BIBOILER1, EU-BIBOILER2, EU-BIBOILER3 were not reported in RY2020 MAERS. REFER TO APPENDIX E for the applicable MAERS forms.

**Parts C4 and C5:** REFER TO APPENDIX B for Emission Calculation Tables of criteria pollutants and HAPs at New or Modified Emission Units, including new exempt engines and boilers not otherwise listed below.

The New Ethylene Oxide Sterilizer (PTI 99-17) has an emission limit of 0.088 lb/year which equates to 4.4E-05 tpy ethylene oxide (EtO).

**Part C9:** REFER TO APPENDIX D for copies of Main Campus Plans:

- Malfunction Abatement Plan for VDL and Farm Lane Incinerators
- Malfunction Abatement Plan for Digester Gas Flare
- Malfunction Abatement Plan for Ethylene Oxide Sterilizer/Aerator
- Incinerator Operation and Maintenance Guidelines, contained in Appendix 9-1 of the ROP
- Waste Management Plan for VDL and Farm Lane Incinerators, contained in Appendix 10-1 of the ROP

**PART F**

**Part F2:** PTI No. 68-17A incorporates a correction to the maximum exhaust diameter for EU-FLNRINC (Special Condition VIII.1) of 40 inches.

**Part F3:** PTI Nos. 575-85 and 127-07 incorporate emission units previously installed at the Michigan Biotechnology Institute "(MBI Building"). MSU acquired the Michigan Biotechnology Institute in April 2016.

**Part F4**: SV-BIBOILERS has not been reported in RY2020 MAERS. REFER TO APPENDIX E for applicable MAERS forms.

**Part F5:** PTI No. 68-17A incorporates an update to the description of EU-FLNRINC to reflect the unit's design "burn rate" of 825 lb/hr.

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) |
|---|---|---|---|---|
| K3249 | 8221 | 611310 | MI-ROP-K3249-2016a | Section 2 |

| Source Name |
|---|
| Michigan State University |

| Street Address |
|---|
| 354 Service Road |

| City | State | ZIP Code | County |
|---|---|---|---|
| East Lansing | MI | 48824 | Ingham |

| Section/Town/Range (if address not available) |
|---|
| |

| Source Description |
|---|
| MSU's T.B. Simon Power Plant is a cogeneration facility that provides electricity and steam (for heat) to the Main Campus. The plant operates four (4) natural gas-fired boilers, one (1) natural gas-fired combustion turbine generator and one (1) heat recovery steam generator. |

☒ 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) |
|---|---|
| Michigan State University | Section 2 |

| Mailing address (☒ check if same as source address) |
|---|
| |

| City | State | ZIP Code | County | Country |
|---|---|---|---|---|
| | | | | |

☐ 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: K3249 | Section Number (if applicable): 2 |
|---|---|

## 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 | | | |
|---|---|---|---|---|
| Ms. Sherri Jett | Director of Utilities | | | |
| Company Name & Mailing address (☒ check if same as source address) | | | | |
| City | State | ZIP Code | County | Country |
| | | | | |
| Phone number | E-mail address | | | |
| 517-355-3314 | jettsher@msu.com | | | |

| Contact 2 Name (optional) | Title | | | |
|---|---|---|---|---|
| Ms. Amanda Groll | Utilities and Environmental Analyst | | | |
| Company Name & Mailing address (☒ check if same as source address) | | | | |
| City | State | ZIP Code | County | Country |
| | | | | |
| Phone number | E-mail address | | | |
| 517-884-7120 | pulidoam@msu.edu | | | |

### RESPONSIBLE OFFICIAL INFORMATION

| Responsible Official 1 Name | Title | | | |
|---|---|---|---|---|
| Mr. Dan Bollman | Vice President for Strategic Infrastructure Planning and Facilities | | | |
| Company Name & Mailing address (☐ check if same as source address)<br>1147 Chestnut Road, Room 101 | | | | |
| City | State | ZIP Code | County | Country |
| Lansing | MI | 48824 | Ingham | USA |
| Phone number | E-mail address | | | |
| 517-355-3366 | dbollman@ipf.msu.edu | | | |

| 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: K3249 | Section Number (if applicable): 2 |
|---|---|

## 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)**

Dan Bollman, Vice President for Strategic Infrastructure Planning and Facilities

***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.***

Daniel YBollman — **Signature of Responsible Official**

3-30-21 — **Date**

| SRN: K3249 | Section Number (if applicable): 2 |
|---|---|

## 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)<br>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<br>☐ 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?<br>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.<br>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?<br>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.<br>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.<br>Is an Acid Rain Permit Renewal Application included with this application? | ☐ Yes ☒ No<br>☐ Yes ☒ No |
| C8. | Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)?<br>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.<br>Is a CAM plan included with this application?<br>If a CAM Plan is included, check the type of proposed monitoring included in the Plan:<br>1. Monitoring proposed by the source based on performance of the control device, or<br>2. Presumptively Acceptable Monitoring, if eligible | ☐ Yes ☒ No<br><br>☐ Yes ☒ No<br><br>☐<br>☐ |
| 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?<br>If Yes, then a copy must be submitted as part of the ROP renewal application. | ☒ Yes ☐ No |
| C10. | Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable?<br>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. | ☐ Yes ☒ No |

☒ 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: K3249 | Section Number (if applicable): 2 |
|---|---|

## 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)] |
|---|---|---|---|
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Comments:

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

## 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?<br>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?<br>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:

**Part E3:** MSU has incorporated changes to existing emission units (i.e., removal of coal firing capabilities) through a PTI. However, the emission units were not considered modified or reconstructed.

**Part E4:** Various coal handling equipment has been dismantled and removed, including EU-MHFUGITIVE, EU-CONVEYOR4, and EU-LIMESILO4.

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

## 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 |
|---|---|---|---|
| 75-14C | EU-UNIT4 | Circulating fluidized bed natural gas boiler capable of generating 350,000 lb./hr. of steam. The boiler is used to generate heating steam for the university and for the firing of a steam turbine to produce electricity for the university. | 12/12/1990, 10/20/2011, 1/10/2017 |
| 75-14C | EU-SPENTSANDEXH 4 | Unit 4 spent sand handling mechanical exhauster used to pneumatically transfer spent sand from hoppers to the spent sand silo. The vacuum system pump pulls the spent sand from the hoppers and into the spent sand silo via a cyclone separator. Two separator discharge vent fans are associated. | 12/12/1990, 1/10/2017 |
| 75-14C | EU-SPENTSANDSILO 4 | Unit 4 spent sand silo vent. This air displacement vent is equipped with a bag filter. This vent discharges air from the spend sand silo during periods when spent sand is being loaded into the silo. | 12/12/1990, 1/10/2017 |
| 139-18 | New RICE and Package Boiler | PTI No. 139-18 to be incorporated into ROP upon completion of construction and initial compliance demonstrations. | New RICE installed 11/2020 |

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:

MSU is in the process of installing and commissioning the natural gas-fired RICE and package boiler under PTI No. 139-18. Initial startup of the RICE occurred on November 17, 2020. PTI 139-18 equipment will be combined into MSU's ROP through an amendment application within 12 months of startup and following the initial compliance demonstration.

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

## 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: K3249 | Section Number (if applicable): 2 |
|---|---|

## 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?<br>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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |

## 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 |
| 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-**

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: K3249 | Section Number (if applicable): 2 |
|---|---|---|

1. Additional Information ID
**AI-Part F**

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

**PART C**

**Part C1:** EUENGINE1, EUENGINE2, and EUENGINE3 from PTI No. 139-18 were not reported in RY2020 MAERS. REFER TO APPENDIX E for the applicable MAERS forms.

**Parts C4 and C5:** REFER TO APPENDIX B and PTI APPLICATION NOS. 75-14C AND 138-19 for Emission Calculation Tables of criteria pollutants and HAPs at New or Modified Emission Units

**Part C9:** REFER TO APPENDIX D for a copy of the T.B. Simon Plan:

- Malfunction Abatement Plan for Units 1, 2, and 4

**PART F**

**Part F2:** PTI No. 75-14C removes coal-firing capabilities (and associated permit conditions and requirements) from EU-UNIT4. Additionally, the emission units EU-MHFUGITIVE, EU-CONVEYOR4, EU-LIMESILO4 were removed from the permit.

**Part F3:** MSU is in the process of installing and commissioning the natural gas-fired RICE and package boiler under PTI No. 139-18. Initial startup of the RICE occurred on November 17, 2020. PTI 139-18 equipment will be combined into MSU's ROP through an amendment application within 12 months of startup and following the initial compliance demonstration.

**Part F4**: SVENGINE1, SVENGINE2, and SVENGINE3 were not reported in RY2020 MAERS. REFER TO APPENDIX E for applicable MAERS forms.

**Part F5:** PTI No. 75-14C incorporates updates to the emission unit ID and description of the following emission units with the removal of solid fuel handling and firing capabilities:
EU-ASHEXH4 --> EU-SPENTSANDEXH4
EU-ASHSILO4 --> EU-SPENTSANDSILO4

EGLE Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division

# RENEWABLE OPERATING PERMIT APPLICATION
# C-001: CERTIFICATION

*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 provide this information may result in civil and/or criminal penalties. Please type or print clearly.*

**This form is completed and included as part of Renewable Operating Permit (ROP) initial and renewal applications, notifications of change, amendments, modifications, and additional information.**

| Form Type **C-001** | SRN K3249 |
|---|---|

| Stationary Source Name<br>Michigan State University | |
|---|---|
| City<br>East Lansing | County<br>Ingham |

## SUBMITTAL CERTIFICATION INFORMATION

1. Type of Submittal *Check only one box.*

☐ Initial Application (Rule 210) ☐ Notification / Administrative Amendment / Modification (Rules 215/216)

☒ Renewal (Rule 210) ☐ Other, describe on AI-001

2. If this ROP has more than one Section, list the Section(s) that this Certification applies to Sections 1 and 2

3. Submittal Media ☒ E-mail ☐ FTP ☐ Disk ☒ Paper

4. Operator's Additional Information ID - Create an Additional Information (AI) ID that is used to provide supplemental information on AI-001 regarding a submittal.

**AI**

## CONTACT INFORMATION

| Contact Name<br>Thomas Grover, CHMM | Title<br>Environmental Compliance Officer |
|---|---|
| Phone number<br>517-355-6651 | E-mail address<br>grovert@msu.edu |

**This form must be signed and dated by a Responsible Official.**

| Responsible Official Name<br>Dan Bollman | | | Title<br>V.P. for Strategic Infastructure Planning and Facilities | |
|---|---|---|---|---|
| Mailing address<br>1147 Chestnut Road, Room 101 | | | | |
| City<br>East Lansing | State<br>MI | ZIP Code<br>48824 | County<br>Ingham | Country<br>USA |

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

Daniel T Bollman — Signature of Responsible Official

3-30-21 — Date

# ROP Renewal Application

## Michigan State University

**Main Campus and T.B. Simon Power Plant**

**East Lansing, Michigan**

**NTH Project No. 74-190192**

**March 30, 2021**

NTH Consultants, Ltd.
3001 Coolidge Road, Suite 101
East Lansing, MI 48823

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## 1.0 FACILITY OVERVIEW

Michigan State University (MSU) is a state educational institution located in East Lansing, Michigan. MSU is located in Ingham County, which is classified as an attainment area (or unclassified) for the National Ambient Air Quality Standards (NAAQS). MSU operates the T.B. Simon Power Plant and various equipment throughout the East Lansing Main Campus pursuant to the terms and conditions of Renewable Operating Permit (ROP) No. MI-ROP-K3249-2016a. Due to the size of MSU's campus and number of emission units, MSU's ROP is divided into two (2) sections, Section 1 for the Main Campus and Section 2 for the T.B. Simon Power Plant.

The primary emission units at the MSU Main Campus (Section 1) include three (3) pathological waste incinerators as well as one (1) biodigester with an associated flare for control and reciprocating internal combustion engine (RICE) for electric generation, three (3) engine test cells, three (3) paint booths, an ethylene oxide sterilizer, various parts washers, and several RICE and boilers located throughout campus.

MSU's T.B. Simon Power Plant (Section 2) is a cogeneration facility that provides electricity and steam (for heat) to the Main Campus. The primary emission units at T.B. Simon Power Plant include four (4) natural gas-fired boilers (EU-UNIT1 through EU-UNIT4), one (1) natural gas-fired turbine generator (EU-UNIT6) and one (1) heat recovery steam generator (EU-UNIT5). Since the previous ROP renewal, MSU has restricted operation at T. B. Simon to natural gas only and discontinued operation on solid fuel. The boilers are subject to the nitrogen oxide ($NO_x$) SIP Call during ozone season, and MSU maintains a continuous emissions monitoring system (CEMS), or equivalent predictive emissions monitoring system (PEMS), to continuously monitor emissions.

MSU has also recently installed three (3) natural gas-fired RICE in accordance with Permit to Install (PTI) No. 138-19 and is in the process of commissioning the new equipment.

MSU is a major stationary source subject to Prevention of Significant Deterioration (PSD) and Michigan's Title V ROP Program. MSU is also considered a major source of hazardous air pollutants

(HAPs) as the PTE of certain individual HAPs is greater than 10 tpy and aggregate HAPs is greater than 25 tpy.

MSU's ROP No. MI-ROP-K3249-2016a was issued October 21, 2016, revised March 7, 2017, and is set to expire on October 21, 2021. As required by R 336.1210(9) of the Michigan Air Pollution Control Rules, MSU must submit an administratively complete ROP renewal application not more than 18 months, but not less than 6 months, prior to the expiration date of the current ROP. The current ROP is set to expire on October 21, 2021; therefore, an ROP Renewal Application must be submitted and deemed administratively complete by April 21, 2020.

## 2.0 ROP RENEWAL APPLICATION

The enclosed ROP Renewal Application satisfies the requirements of Rule R 336.1210(9) and has been created using the ROP Renewal Application Form (EQP 6000). As required by EGLE, we have populated a separate EQP 6000 form for each section of the ROP.

The ROP application is being submitted electronically, in addition to paper copy, to allow for an administrative completeness determination pursuant to R 336.1210(2)(a)(i)(B). The ROP Renewal Application Form has been populated according to guidance provided by Michigan Department of Environment, Great Lakes, and Energy (EGLE), and the paper copy of the renewal application has been organized according to the EGLE instructions. The ROP application is certified by the Responsible Official.

The following sections outline the changes that are being proposed to MSU's ROP. A mark-up copy of the ROP is provided in Appendix A. Facility emission calculations are included in Appendix B, and copies of Permits to Install (PTIs) are included in Appendix C. Finally, the facility plans referenced in the ROP are incorporated into Appendix D.

### 2.1 ROP Section 1 (Main Campus) Changes

Since issuance of ROP No. MI-ROP-K3249-2016a, MSU obtained the following air use PTIs that are proposed to be incorporated into the ROP:

- PTI No. 68-17A, issued on July 21, 2017, for administrative updates to MSU's Farm Lane Incinerator, identified as EU-FLNRINC
- PTI No. 99-17, issued on August 22, 2017 and revised on September 27, 2017, for the installation of one (1) ethylene oxide (EtO) sterilizer/aerator, identified as EU-ETO2, located at the Veterinary Medical Center on Wilson Road

Additionally, on April 1, 2016, MSU acquired the Biotechnology Institute (BI) building located at 3900 Collins Road, which operates equipment in accordance with two (2) existing air use PTIs to be incorporated into the ROP:

- PTI No. 575-85, issued September 6, 1985, for the installation of three (3) boilers capable of combusting natural gas and No. 2 fuel oil
- General PTI No. 127-07, issued April 5, 2007, for anhydrous ammonia and handling

MSU has also installed various exempt equipment, including two (2) 755-horsepower (HP) emergency diesel-fired RICE located at the Facility for Rare Isotope Beams (FRIB), various additional natural gas boilers and emergency RICE, and new paint booths at the Physical Plant and Theater Scene Shop. A list of equipment is contained in the enclosed application and ROP mark-up.

MSU is proposing miscellaneous administrative changes to the ROP, as indicated in our proposed mark-up, including an administrative update to the description and unit ID associated with the Consumat pathological waste incinerator, currently identified as EU-DCPAHINC in ROP No. MI-ROP-K3249-2016a. MSU proposes to update the emission unit ID to "EU-VDLINC", as the facility was renamed the Veterinary Diagnostic Laboratory ("VDL").

The above listed PTIs and equipment are being incorporated into the ROP and/or renewal documents as part of this ROP Renewal Application. Potential emission calculations of criteria pollutants and HAPs have been developed for these units and are included in Appendix B.

## 2.2 ROP Section 2 (T.B. Simon Power Plant) Changes

MSU has been issued two (2) PTIs that relate to changes in Section 2 of the ROP. PTI No. 75-14C was approved on March 16, 2017 for T.B. Simon Power Plant boiler EU-UNIT4 to remove coal firing capabilities and remove dismantled coal handling equipment from the permit.

Additionally, PTI No. 138-19 was issued on May 22, 2019 for new natural gas-fired RICE and a new natural gas-fired package boiler. The RICE are currently undergoing commissioning, and initial compliance demonstrations for the RICE will occur in mid to late 2021. MSU will also be starting construction on the package boiler in the spring of 2021. Equipment listed in PTI No. 138-19 will be incorporated into MSU's ROP Section 2 through an amendment application within 12 months of startup and following the initial compliance demonstrations.

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

EFFECTIVE DATE:

REVISION DATE:

ISSUED TO

**Michigan State University**

State Registration Number (SRN): K3249

LOCATED AT

426 Auditorium Road, Room 450, East Lansing, Michigan 48824

## RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-K3249-

Expiration Date:

Administratively Complete ROP Renewal Application Due Between
{6 months to 18 months prior to the ROP expiration date. Count by months not days}

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-K3249-TBD

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 Environment, Great Lakes, and Energy

Brad Myott, Lansing 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 Environment, Great Lakes and Energy (EGLE) 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.

# Section 1 - MSU Main Campus

# 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% opacity, except for one 6-minute average per hour of not more than 27% 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. Semi-annually 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))**

## Re-openings

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 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, EGLE.[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, EGLE, 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.

# 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 |
|---|---|---|---|
| EU-FLNRINC | Consumat pathological waste incinerator (Farm Lane/Incinerator Road) that burns institutional waste co-fired with 10% or less medical/infectious waste. Additionally, the incinerator burns pathological waste, some low-level nuclear waste, and low volumes of non-hazardous pharmaceutical waste.<br>Fuel type: natural gas<br>Burn rate: 825 lbs/hour | 5/2/1975<br>6/13/1984 | NA |
| EU-VDLINC | ASC design incinerator located at VDL facility on Bennett Rd. Unit is gas fired with a 1,200 lb/hr capacity at 1,800 F and 1 second retention time in secondary chamber. | 10/25/2002 | NA |
| EU-CREMATORY | Crawford Model C500P, natural gas fired, animal crematory, with 200 pound maximum charge and a 75 pound per hour burn rate located at 4125 Beaumont Road. | 11/01/2006 | NA |
| EU-TESTCELL1 | Engine test cell capable of testing engines up to 750 HP for unleaded gasoline/ethanol engines and 1,000 HP for diesel engines located at 1149 Engineering Research Court. Emissions are controlled by catalytic converters. | 3/01/2006 | FG-TESTCELLS |
| EU-TESTCELL2 | Engine test cell capable of testing engines up to 750 HP for unleaded gasoline/ethanol engines and 1,000 HP for diesel engines located at 1149 Engineering Research Court. Emissions are controlled by catalytic converters. | 3/01/2006 | FG-TESTCELLS |
| EU-TESTSTAND | Engine Test stand capable of testing engines up to 750 HP for unleaded gasoline/ethanol engines and 1,000 HP for diesel engines located at 1149 Engineering Research Court. Emissions are controlled by catalytic converters. | 3/01/2006 | N/A |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-DIENGINE | One new uncertified, non-emergency, spark ignition, stationary, 510 horsepower (380kilowatt), 4 stroke lean burn (4SLB), reciprocating internal combustion engine (RICE), used to produce electricity, fired by digester gas, manufactured on February 27, 2013 and rebuilt on April 15, 2016, subject to 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ. Located at the Dairy Cattle Teaching and Research facility on College Road. | 7/01/2013 | NA |
| EU-CHEM | Chemical room lab hood located on Jolly Road. Consolidation of small waste containers is conducted under this hood. | January 1982 | FG-WSF |
| EU-CONSOL1 | Consolidation booth drum hood #1. Consolidation of waste containers is conducted under this hood, located on Jolly Road. | January 1982 | FG-WSF |
| EU-CONSOL2 | Consolidation booth drum hood #2. Consolidation of waste containers is conducted under this hood located on Jolly Road. | January 1982 | FG-WSF |
| EU-ENCLSD-FLARE | An enclosed digester gas flare used as back up for the anaerobic digester EU-DIENGINE located at the dairy facility. The flare is capable of burning up to 150 scfm giving a Heat Input Capacity of 5,400,000 Btu/hr when using the estimated higher heating value of the digester gas of 600 Btu/scf. | 8/01/2012<br>8/01/2016 | NA |
| | | | |
| EU-ETO2 | One (1) ethylene oxide (EtO) sterilizer/aerator located at the Veterinary Medical Center on Wilson Road. The EtO sterilizer uses only 100 percent EtO as a sterilant and is controlled by a catalytic oxidizer located on the roof of the building. | 2017 | NA |
| EU-453DEG01 | Parts washer, University Farms | 2/1/1994 | FG-COLDCLEANER |
| EU-DEGLANDS1-2 | 2 parts washers, Landscape Services | 2/3/2000 | FG-COLDCLEANER |
| EU-DEGPHYSP | Parts washer, Physical Plant | 8/9/1989 | FG-COLDCLEANER |
| EU-DEGTRANS | Parts washer, Transportation Services garage | 7/1/2015 | FG-COLDCLEANER |
| EU-DEGGOLFC | Parts washer, Forest Akers garage | 5/1/1984 | FG-COLDCLEANER |
| EU-SPRAYBOOTH1 | Paint spray booth, Physical Plant | 1/1/2020 | FG-RULE 287(c) |
| EU-SPRAYBOOTH2 | Paint spray booth, Kresge Art Center | 4/21/1987 | FG-RULE 287(c) |
| EU-SPRAYBOOTH3 | Theatre scene shop paint spray booth and open spray area. | 2018 | FG-RULE287(c) |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-AMMONIA | A single anhydrous storage tank and any associated handling process, nurse tanks or applicator tanks. The nominal tank storage capacity shall not exceed 30,000 gallons. | 4/5/2007 | NA |
| EU-BIPROCESS | Process room at Michigan Biotechnology Institute for production runs. | 1985 | FG-RULE290 |
| EU-BIBOILER1 | Cleaver Brooks 16.74 MMBtu natural gas / No. 2 fuel oil fired boiler located at Biotechnology Institute. | 1986 | FG-BOILERMACT & FG-BIBOILERS |
| EU-BIBOILER2 | Cleaver Brooks 16.74 MMBtu natural gas / No. 2 fuel oil fired boiler located at Biotechnology Institute. | 1986 | FG-BOILERMACT & FG-BIBOILERS |
| EU-BIBOILER3 | Cleaver Brooks 10.46 MMBtu natural gas / No. 2 fuel oil fired boiler located at Biotechnology Institute. | 1986 | FG-BOILERMACT & FG-BIBOILERS |
| EU-FRIBGEN1 | 1,220HP Cummins diesel emergency reciprocating internal combustion engine located at the Facility for Rare Isotope Beams | 2017 | FG-NSPS-IIII |
| EU-FRIBGEN2 | 1,220HP Cummins diesel emergency reciprocating internal combustion engine located at the Facility for Rare Isotope Beams | 2017 | FG-NSPS-IIII |
| EU-596GEN01 | 495HP Cummins natural gas generator Model: GTA-19G1 located at Farm Lane underpass #2. | 10/01/2009 | FG-NSPS-JJJJ |
| EU-475GEN01 | 97.5HP Cummins natural gas generator Model: GGHE, located at Waste Storage Facility. | 9/1/2015 | FG-NSPS-JJJJ |
| EU-524GEN01 | 67HP Cummins natural gas generator Model: GGPC, located at Farm Lane incinerator. | 11/1/2015 | FG-NSPS-JJJJ |
| EU-055GEN01 | 750HP Cummins Diesel generator Model: DFEK 5692837 located at the Kellogg Center. | 10/01/2004 | FG-EMERGEN>500ZZZZ |
| EU-069GEN01 | 750HP Cummins Diesel generator Model: KTTA19G2 located at the Breslin Center. | 6/01/1988 | FG-EMERGEN>500ZZZZ |
| EU-160GEN02 | 1350HP Cummins Diesel generator Model: DFHC-3386842 located at the Biomedical Physical Sciences building. | 01/01/2001 | FG-EMERGEN>500ZZZZ |
| EU-215GEN01 | 1490HP Cummins Diesel generator Model: DFHD 5003867 located at DCPAH. | 01/01/2003 | FG-EMERGEN>500ZZZZ |
| EU-BIGEN1 | 755HP Cummins Diesel emergency generator Model DFEK-7511871 located at the Biotechnology Institute building. | 08/08/2011 | FG-NSPS-IIII |
| EU-BIGEN2 | 755HP Cummins Diesel emergency generator Model DFEK-7511871 located at the Biotechnology Institute building. | 08/08/2011 | FG-NSPS-IIII |
| EU-003GEN01 | 70HP Onan natural gas generator Model: UV461 located at the Olin Health Center. | 02/01/1982 | FG-EMERGEN≤500ZZZZ |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-006GEN01 | 192HP Newage/Stamford natural gas generator Model: 300-3298-05 located at the Union. | 10/01/1997 | FG-EMERGEN≤500ZZZZ |
| EU-016GEN01 | 115HP Cummins natural gas generator Model: GGHG-570815 located at Marshall-Adams. | 01/01/2005 | FG-EMERGEN≤500ZZZZ |
| EU-022GEN01 | 200HP Newage/Stamford natural gas generator Model:GTA83G2 located at Agriculture Hall. | 07/01/1998 | FG-EMERGEN≤500ZZZZ |
| EU-028GEN01 | 220 HP Southern Plains Power natural gas generator Model: 140G855-65-12 located at Giltner. | 09/01/1996 | FG-EMERGEN≤500ZZZZ |
| EU-049GEN01 | 100HP Kohler natural gas generator Model: LSG-8750-6005-A located at the Library. | 10/01/1993 | FG-EMERGEN≤500ZZZZ |
| EU-077GEN01 | 287HP Newage/Stamford natural gas generator Model GGLB-7178827 located at Duffy Daugherty. | 06/01/1997 | FG-EMERGEN≤500ZZZZ |
| EU-080GEN01 | 400HP Caterpillar natural gas generator Model: 3408S1 located at the Business College Complex. | 01/01/1992 | FG-EMERGEN≤500ZZZZ |
| EU-081GEN01 | 80HP Onan natural gas generator Model: 60ENA located at the Engineering Building. | 10/01/1995 | FG-EMERGEN≤500ZZZZ |
| EU-081GEN02 | 80HP Onan natural gas generator Model: 60ENA located at the Engineering Building. | 1/01/2002 | FG-EMERGEN≤500ZZZZ |
| EU-083GEN01 | 220HP Cummins natural gas generator Model: G-855 located at the MSU College of Law. | 7/01/1996 | FG-EMERGEN≤500ZZZZ |
| EU-085GEN01 | 240HP Cummins natural gas generator Model: GGKD-4961391 located at the Wharton Center. | 8/01/2001 | FG-EMERGEN≤500ZZZZ |
| EU-086GEN01 | 118HP Kohler natural gas generator Model: 605GEN12 located at Plant and Soil Sciences. | 7/01/1989 | FG-EMERGEN≤500ZZZZ |
| EU-086GEN02 | 100HP Chrysler natural gas generator Model: B75CGH-4R located at Plant and Soil Sciences. | 5/01/1989 | FG-EMERGEN≤500ZZZZ |
| EU-087GEN01 | 80HP Cummins natural gas generator Model: 60ENA located at Public Safety. | 5/01/2001 | FG-EMERGEN≤500ZZZZ |
| EU-132GEN01 | 454HP Stamford natural gas generator Model: Model: GTA19 located at Anthony Hall. | 12/01/1995 | FG-EMERGEN≤500ZZZZ |
| EU-133GEN01 | 40HP Kohler natural gas generator Model: CSG-6431-6005F located at Angell Building. | 1/01/1987 | FG-EMERGEN≤500ZZZZ |
| EU-160GEN01 | 435HP Cummins diesel generator Model: NT-855-G6 located at Biomedical Physical Sciences. | 1/01/2001 | FG-EMERGEN≤500ZZZZ |
| EU-163GEN01 | 380HP Cummins natural gas generator Model: GTA-855A located at the Chemistry Building. | 11/01/1997 | FG-EMERGEN≤500ZZZZ |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-170GEN01 | 150HP Onan natural gas generator Model: F817GU/G48966 located at Veterinary Medicine. | 2/01/1988 | FG-EMERGEN≤500ZZZZ |
| EU-170GEN02 | 80HP Generac diesel generator Model: 97A040075 located at Veterinary Medicine. | 9/01/1997 | FG-EMERGEN≤500ZZZZ |
| EU-170GEN03 | 495HP Cummins natural gas generator Model: 325GFEB located at Veterinary Medicine. | 5/01/2005 | FG-EMERGEN≤500ZZZZ |
| EU-175GEN01 | 100HP Onan natural gas generator Model: LSG-8751-6005A located at IM East. | 3/01/1988 | FG-EMERGEN≤500ZZZZ |
| EU-178GEN01 | 80HP Kohler natural gas generator Model: 90R282 located at Plant Biology. | 12/01/2000 | FG-EMERGEN≤500ZZZZ |
| EU-181GEN01 | 200HP Cummins natural gas generator Model: GTA8-361 located at the Center for Integrated Plant Systems. | 9/01/2000 | FG-EMERGEN≤500ZZZZ |
| EU-186GEN01 | 107HP Cummins natural gas generator Model: 80ENAD located at Food Safety and Toxicology. | 5/01/1996 | FG-EMERGEN≤500ZZZZ |
| EU-186GEN02 | 379HP Cummins natural gas generator Model: GTA855-B located at Food Safety and Toxicology. | 5/01/1996 | FG-EMERGEN≤500ZZZZ |
| EU-200GEN01 | 500HP Waukesha natural gas generator Model: 2000 GEN located at the Clinical Center. | 4/01/1979 | FG-EMERGEN≤500ZZZZ |
| EU-203GEN01 | 107HP Cummins natural gas generator Model: ESG642-4.2L located at the Engineering Research Complex. | 5/01/2004 | FG-EMERGEN≤500ZZZZ |
| EU-203GEN02 | 47HP Ford natural gas generator Model: ESG-642 located at the Engineering Research Complex. | 2/01/2006 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-1 | Honda 6.5KW diesel generator (8HP) | 1/01/2002 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-10 | Honda 3HP diesel generator Model: EV3000 | 1/01/2003 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-2 | Coleman 7HP diesel generator | 1/01/2003 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-5 | CAT 268HP diesel generator Model: CAT200 | 1/01/2004 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-6 | CAT 268HP diesel generator Model: CAT200 | 1/01/2004 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-7 | CAT 268HP diesel generator Model: CAT200 | 1/01/2004 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-8 | CAT 268HP diesel generator Model: CAT200 | 1/01/2004 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-9 | CAT 268HP diesel generator Model: CAT200 | 1/01/2004 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-3 | CAT 268HP diesel generator Model: CAT200 | 1/01/2004 | FG-EMERGEN≤500ZZZZ |
| EU-210GEN-CT85 | Generac 114HP diesel generator Model: 5459-S | 01/01/1993 | FG-EMERGEN≤500ZZZZ |
| EU-210-PORGEN-11 | 60HP Multiquip diesel generator Model: DH-04801 | 12/01/2012 | FG-EMERGEN≤500ZZZZ |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-211GEN01 | 400HP Caterpillar natural gas generator Model: 102-9407 located at University Research Containment. | 1/01/1993 | FG-EMERGEN≤500ZZZZ |
| EU-216GEN01 | 340HP Spectrum natural gas generator Model: 6063TKG5 located at Parking Ramp 5. | 1/01/2001 | FG-EMERGEN≤500ZZZZ |
| EU-218GEN01 | 167HP Perkins/Olympian diesel generator located at the Executive Development Center. | 01/01/2002 | FG-EMERGEN≤500ZZZZ |
| EU-219GEN01 | 287HP Cummins natural gas generator Model: GTA12 located at the new Shaw Lane Parking Ramp. | 01/01/2002 | FG-EMERGEN≤500ZZZZ |
| EU-222GEN01 | 240HP Cummins natural gas generator Model: GGKD-5740798 located at Parking Ramp 6. | 10/01/2005 | FG-EMERGEN≤500ZZZZ |
| EU-472DGEN01 | 100HP Kohler liquid propane generator Model: 17RY located at the Tree Research Headhouse. | 9/01/2001 | FG-EMERGEN≤500ZZZZ |
| EU-479GEN01 | 107HP Cummins natural gas generator Model: 80ENAD located at the Swine Teaching and Research Building. | 01/01/2000 | FG-EMERGEN≤500ZZZZ |
| EU-577GEN01 | 167HP Onan natural gas generator Model: LSG-8751-6005-A located at Radio Equipment Shelter. | 01/01/2000 | FG-EMERGEN≤500ZZZZ |
| EU-601GEN01 | 87HP Onan liquid propane generator Model: 65ENB located at Dobie Tower Transmitting. | 01/01/1978 | FG-EMERGEN≤500ZZZZ |
| EU-WTPGEN | 348HP natural gas emergency generator located at Water Treatment Plant. | 2019 | FG-NSPS-JJJJ |
| EU-MUSICBLGGEN | 335HP natural gas emergency generator located at the Music Building. | After 2006 | FG-NSPS-JJJJ |
| EU-ISTBGEN1 | 737HP natural gas emergency generator located at the Student Teacher Building. | 2019 | FG-NSPS-JJJJ |
| EU-ISTBGEN2 | 737HP natural gas emergency generator located at the Student Teacher Building. | 2019 | FG-NSPS-JJJJ |
| EU-ISTBGEN3 | 737HP natural gas emergency generator located at the Student Teacher Building. | 2019 | FG-NSPS-JJJJ |
| EU-FLNGEN | 60HP natural gas emergency generator located at Farm Lane. | After 2006 | FG-NSPS-JJJJ |
| EU-WSFGEN | 60HP natural gas emergency generator located at the Waste Storage Facility. | After 2006 | FG-NSPS-JJJJ |

# EU-FLNRINC
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Consumat Pathological waste incinerator (Farm Lane/Incinerator Road) that burns institutional waste co-fired with 10% or less medical/infectious waste. Additionally, the incinerator burns pathological waste, some low-level nuclear waste, and low volumes of non-hazardous pharmaceutical waste. Fuel type: natural gas. Burn rate: 825 lbs/hour. PTI 68-17A

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

Direct flame afterburner

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Particulate Matter | 0.20 Lbs/1000 lbs of exhaust gasses corrected to 50% excess air. [2] | Test Protocol* | EU-FLNRINC | SC V.1, V.2 and V.3 | **R 336.1331** |

*Test protocol shall specify averaging time.

## II. MATERIAL LIMITS

1. The permittee shall not burn polyvinyl chloride plastics in EU-FLNRINC.[1] **(R 336.1225, R 336.1901)**

2. The permittee shall not burn chemotherapeutic waste in EU-FLNRINC.[1] **(R 336.1225, R 336.1901)**

3. The permittee shall burn only pharmaceutical waste that is deemed non-hazardous in EU-FLNRINC.[1] **(R 336.1225, R 336.1901)**

4. In any combination of waste, the permittee shall not burn less than 90% Pathological waste by weight to maintain status as a pathological waste incinerator unit. Failure to do so will require compliance with 40 CFR Part 60, Subpart FFFF. **(40 CFR 60.2993(l))**

5. The permittee shall not burn any waste in EU-FLNRINC other than the following wastes.[1] **(R 336.1225, R 336.1901)**
   a. **Institutional wastes** as defined in 40 CFR 60.3078. Institutional waste means solid waste that is combusted at any institutional facility that generated the waste.
   b. **Non-hazardous Pharmaceutical wastes** as defined in the EGLE Office of Waste Management and Radiological Protection Hazardous Waste Management Rules, R 299.9228(2)(m), Non-hazardous Pharmaceutical Waste means solid waste pharmaceuticals that are not hazardous.
   c. **Pathological Waste** as defined in 40 CFR 60.51c. Pathological waste is waste material consisting of only human or animal remains, anatomical parts and/or tissue, the bags/containers used to collect and transport the waste material and animal bedding.
   d. **Medical/Infectious waste** - as defined in 40 CFR 60.51c, medical/infectious waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is further listed in the above regulation. This waste shall not exceed

10 percent, by weight, in aggregate, of the total waste burned in EU-FLNRINC as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered "other" wastes when calculating the percentage of medical/infectious waste combusted.

6. The permittee shall not burn more than 10 percent, by weight, of medical/infectious waste as defined in SC II.5 of EU-FLNRINC.[2] **(40 CFR 60.51c, 40 CFR 60.50c(c))**

7. The permittee may incinerate animal carcasses and paper wastes containing byproduct materials defined in license to the permittee by the U.S. Nuclear Regulatory Commission, in accordance with the conditions of said license and all applicable federal regulations including 10 CFR Part 20.[2] **(10 CFR Part 20)**

8. The permittee shall use only natural gas as fuel in EU-FLNRINC.[1] **(R 336.1225, R 336.1901)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not combust waste in EU-FLNRINC unless a minimum temperature of 1750 °F and a minimum retention time of 0.5 second in the afterburner are maintained.[2] **(R 336.1301, R 336.1331, R 336.1910)**

2. The after burner shall be installed, maintained, and operated in a satisfactory manner to control emissions from EU-FLNRINC. A list of operating and maintenance procedures is specified in Appendix 9-1.[2] **(R 336.1301, R 336.1331, R 336.1910)**

3. The permittee shall not operate EU-FLNRINC unless the temperature setting and indicator light for the afterburner are calibrated in a satisfactory manner. The indicator light will turn on when the afterburner reaches the minimum temperature from SC III.1.[2] **(R 336.1301, R 336.1331, R 336.1910)**

4. The permittee shall not operate EU-FLNRINC unless the Section 1 Incinerators Malfunction Abatement Plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall include procedures for maintaining and operating in a satisfactory manner, EU-FLNRINC, add-on air pollution control device, and monitoring equipment during malfunction events, and a program for corrective action for such events. If the malfunction abatement plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the malfunction abatement plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor.[2] **(R 336.1910, R 336.1911)**

5. The permittee shall operate EU-FLNRINC as per the Waste Management Plan in Appendix 10-1 or via an alternate plan approved by the AQD District Supervisor.[2] **(40 CFR 60.50c(c))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU-FLNRINC unless the afterburner is installed, maintained, and operated in a satisfactory manner.[2] **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910)**

2. The permittee shall equip and maintain the afterburner of EU-FLNRINC with a thermocouple control system.[2] **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1901, R 336.1910, R 336.1910)**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the temperature in the afterburner of EU-FLNRINC on a continuous basis.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

4. The EU-FLNRINC afterburner temperature shall be interconnected with the primary chamber start relay so that the primary chamber burner will start only after the afterburner minimum temperature (1750 °F) is reached.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

## V. TESTING/SAMPLING

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

1. Visual inspection for abnormal/excessive smoke to be performed at least once a day, every day that the incinerator is operating.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

2. The permittee shall measure the opacity using Method 9 (Visual Determination of the Opacity of Emissions from Stationary Sources) upon request of the AQD.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

3. The permittee shall verify PM emission rates, by testing at owner's expense, in accordance with department requirements within 12 months of this permit renewal issuance, and once every five years thereafter, unless the permittee has submitted to the AQD District Supervisor an acceptable demonstration that the most recent acceptable test remains valid and representative. During performance testing, the permittee shall also determine and record the average operating temperature of the afterburner to control the emissions from the EU-FLNRINC.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

## VI. MONITORING/RECORDKEEPING

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

1. All required calculations shall be completed in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar quarter, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1224, R 336.1225, R 336.1901, 40 CFR 60.50c(c))**

2. The permittee shall monitor and record the temperature in the afterburner of EU-FLNRINC on a continuous basis in a manner and with instrumentation acceptable to the District Supervisor, Air Quality Division. Records shall be kept on file and made available to the Department upon request.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

3. The permittee shall keep, in a satisfactory manner, records on a calendar quarter basis of the description and weight of waste burned in EU-FLNRINC, as required by SC II.4, II.5 and II.6 specifically differentiating between pathological and other wastes. All records shall be kept on file and made available to the Department upon request.[2] **(R 336.1225, R 336.1901, 40 CFR 60.51c)**

4. The permittee shall calculate the weight percent of medical/infectious waste burned in EU-FLNRINC, as required by SC II.6. All records shall be kept on file and made available to the Department upon request. **(R 336.1225, R 336.1901, 40 CFR 60.51c)**

## VII. REPORTING

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

2. Semi-annual 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. A complete test plan shall be submitted to the AQD no less than 30 days prior to testing for review. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.[2] **(R 336.2001)**

**See Appendix 8-1**

## 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. SVFLRINC01 | 46[1] | 29[1] | **R 336.1901** |

## 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).

# EU-VDLINC
# EMISSION UNIT CONDITIONS

## DESCRIPTION

ASC design Pathological Waste incinerator located at the Veterinary Diagnostic Laboratory (VDL) on Bennett Rd that burns 5% or less medical/infectious waste. Unit is gas fired with a 1,200 lb/hr capacity at 1,800 F and 1 second retention time in secondary chamber. (PTI 380-00)

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

Direct flame afterburner

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Particulate | 1.71 lbs/hr[2] | Test Protocol* | EU-VDLINC | SC V.1, V.2 and V.3 | **R 336.1331** |
| 2. Particulate | 0.10 gr/dscf @ 7% oxygen[2] | Test Protocol* | EU-VDLINC | SC V.1, V.2 and V.3 | **R 336.1331** |

*Test protocol shall specify averaging time.

## II. MATERIAL LIMIT(S)

1. The permittee shall not burn any waste in the EU-VDLINC other than the following wastes.[2] **(40 CFR 60.50c(c))**
   a. **Pathological Waste** as defined in 40 CFR 60.51c. Pathological waste is waste material consisting of only human or animal remains, anatomical parts and/or tissue, the bags/containers used to collect and transport the waste material and animal bedding.
   b. **Medical/Infectious Waste** as defined in 40 CFR 60.51c. This waste shall not contain any sharps or exceed 5 percent, by weight, in aggregate, of the total waste burned in the EU-VDLINC as measured on a calendar month basis.
   c. **Institutional wastes** as defined in 40 CFR 60.3078. Institutional waste means solid waste that is combusted at any institutional facility that generated the waste.

2. The permittee shall burn 90 percent or more by weight pathological waste to maintain status as a pathological waste incinerator unit. Failure to do so will require compliance with 40 CFR Part 60, Subpart FFFF. **(40 CFR 60.2993(l))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not charge or combust waste in the EU-VDLINC unless a minimum 15-minute average temperature of 1800°F is maintained.[2] **(R 336.1301, R 336.1910)**

2. The after burner shall be installed, maintained, and operated in a satisfactory manner to control emissions from EU-VDLINC. A list or operation and maintenance procedures as specified in Appendix 9-1.[2] **(R 336.1301, R 336.1331, R 336.1910)**

The permittee shall not operate EU-VDLINC unless the Incinerators Malfunction Abatement Plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall include procedures for maintaining and operating in a satisfactory manner, EU-VDLINC, add-on air pollution control device, and monitoring equipment during malfunction events, and a program for corrective action for such events. If the malfunction abatement plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the malfunction abatement plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor.[2] **(R 336.1910, R 336.1911)**

3. The permittee shall not operate the EU-VDLINC unless the waste management plan specified in Appendix 10-1, or an alternate plan approved by the District Supervisor, is implemented and maintained.[2] **(40 CFR 60.50c)**

**See Appendices 9-1 and 10-1**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU-VDLINC unless the afterburner is installed, maintained, and operated in a satisfactory manner.[2] **(R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910)**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the temperature in the afterburner of EU-VDLINC on a continuous basis. The temperature monitoring device shall be installed, calibrated, operated and maintained properly.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

3. The afterburner shall have a minimum retention time of 1.0 second.[2] **(R 336.1301, R 336.1910)**

## V. TESTING/SAMPLING

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

1. Visual inspection for abnormal/excessive smoke to be performed at least once a day, every day that the incinerator is operating.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

2. The permittee shall measure the opacity using Method 9 (Visual Determination of the Opacity of Emissions from Stationary Sources) upon request of the AQD.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

3. The permittee shall verify PM emission rates, by testing at owner's expense, in accordance with department requirements within 12 months of permit renewal issuance, and once every five years thereafter, unless the permittee has submitted to the AQD District Supervisor an acceptable demonstration that the most recent acceptable test remains valid and representative. During performance testing, the permittee shall also determine and record the average operating temperature of the afterburner to control the emissions from EU-VDLINC. **(R 336.1331)**

## 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 temperature in the secondary combustion chamber during operation on a continuous basis in a manner and with instrumentation acceptable to the District Supervisor, Air Quality Division. All records shall be kept on file and made available to the Department upon request.[2] **(R 336.1301, R 336.1331, R 336.1910)**

2. If excessive visible emissions are observed during the daily visual inspections, the permittee shall implement the following procedures:[2] **(R 336.1301, R 336.1331, R 336.1910)**
   a. Immediately cease charging EU-VDLINC;
   b. Determine the cause of the excessive visible emissions within 4 hours of discovery;
   c. Identify and implement corrective measures to reduce/eliminate the excessive visible emissions within 8 hours; or
   d. Initiate shut down of the EU-VDLINC consistent with the provisions of the malfunction abatement plan.
   e. Notify AQD of deviations as per General Condition 21.

3. The permittee shall keep records on a daily basis of the type and weight of waste burned in EU-VDLINC specifically differentiating between pathological and medical/infectious waste. All records shall be kept on file and made available to the Department upon request.[2] **(40 CFR 60.50c(c))**

## VII. REPORTING

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

2. Semi-annual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be received by 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. Report shall be received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. A complete test plan shall be submitted to the AQD no less than 30 days prior to testing for review. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.[2] **( R 336.1331)**

**See Appendix 8-1**

## 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. SVVDLINC | 56[2] | 85[2] | **40 CFR 52.21 (c) and (d)** |

## 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).

# EU-CREMATORY
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Crawford Model C500P, natural gas fired, animal crematory, with 200 pound maximum charge and a 75 pound per hour burn rate located at 4125 Beaumont Road. (PTI 226-05)

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

Direct flame afterburner

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. PM | 0.20 pounds per 1,000 pounds of exhaust gases, corrected to 50% excess air.[2] | Test Protocol* | EU-CREMATORY | SC V.1 | **R 336.1331** |

*Test protocol will specify averaging time.

## II. MATERIAL LIMIT(S)

1. The permittee shall not burn any waste in EU-CREMATORY other than the following wastes:[2] **(40 CFR 60.51c)**
   a. **Pathological wastes** as defined in 40 CFR 60.51c. Pathological waste means waste materials consisting of only human or animal remains, anatomical parts, and/or tissue; the bags/containers used to collect and transport the waste material; and animal bedding.

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not combust waste in EU-CREMATORY unless a minimum temperature of 1600 °F is maintained.[2] **(R 336.1301, R 336.1331, R 336.1910)**

2. The afterburner shall be installed, maintained, and operated in a satisfactory manner to control emissions from EU-CREMATORY. A list of operating and maintenance procedures is specified in Appendix 9-1.[2] **(R 336.1301, R 336.1331, R 336.1910)**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. EU-CREMATORY shall have a minimum retention time of 1.0 second.[2] **(R 336.1301, R 336.1331, R 336.1910)**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the temperature in the afterburner of EU-CREMATORY on a continuous basis.[2] **(R 336.1301, R 336.1331, R 336.1901)**

## V. TESTING/SAMPLING

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

1. Visual inspection for abnormal/excessive smoke to be performed at least once a day, every day that the incinerator is operating.[2] **(R 336.1301, R 336.1331, R 336.1901, R 336.1910)**

2. Verification of PM emission rates, by testing at owner's expense, in accordance with department requirements shall be completed upon the request of the AQD. During performance testing, the permittee shall also determine and record the average operating temperature of the afterburner to control the emissions from the EU-CREMATORY. **( R 336.1331)**

## 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 temperature in the afterburner during operation on a continuous basis in a manner and with instrumentation acceptable to the District Supervisor, Air Quality Division. All records shall be kept on file and made available to the Department upon request. **(R 336.1301, R 336.1331, R 336.1910)**

2. The permittee shall keep, in a satisfactory manner, daily records of the time, description and weight of waste combusted in EU-CREMATORY.[2] **(R 336.1205, 40 CFR 60.50c(b))**

## VII. REPORTING

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

2. Semi-annual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be received by 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. Report shall be received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Upon the request for testing, a complete test plan shall be submitted to the AQD no less than 30 days prior to testing for review. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **( R 336.1331)**

**See Appendix 8-1**

## VIII. STACK/VENT RESTRICTIONS

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 Diameter (inches) | Minimum Height Above Ground Level (feet) | Applicable Requirements |
|---|---|---|---|
| 1. SVCREMATORY | 16[1] | 25[1] | **R 336.1901** |

## 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).

# EU-TESTSTAND
# EMISSION UNIT CONDITIONS

## DESCRIPTION

An Engine Test stand capable of testing engines up to 750 HP for unleaded gasoline/ethanol engines and 1,000 HP for diesel engines located at 1149 Engineering Research Court. (PTI 229-05A)

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

Catalytic converters while testing gasoline/ethanol engines

## 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 |
|---|---|---|---|---|---|
| 1. Unleaded Gasoline | 1,000[2] gallons | 12 month rolling time period as determined at the end of each calendar month | EU-TESTSTAND | SC VI.2 | **R 336.1205(1)(a) and (3), R 336.1225, R 336.1702(a)** |
| 2. Diesel Fuel | 1,000[2] gallons | 12 month rolling time period as determined at the end of each calendar month | EU-TESTSTAND | SC VI.2 | **R 336.1205(1)(a) and (3), R 336.1225, R 336.1702(a)** |

## III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain EU-TESTSTAND with a catalytic converter when burning gasoline.[2] **(R 336.1205(1)(a) and (3), R 336.1225, R 336.1702(a), R 336.1910)**

## V. TESTING/SAMPLING

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

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 complete all required records in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1205(1)(a)&(3), R 336.1225, R 336.1702(a))**

2. The permittee shall record, in a satisfactory manner, monthly and previous 12-month fuel usage for EU-TESTSTAND. All records shall be kept on file and made available to the Department upon request.[2] **(R 336.1205(1)(a)&(3), R 336.1225, R 336.1702(a))**

## VII. REPORTING

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

2. Semi-annual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be received by 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. Report shall be received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

**See Appendix 8-1**

## VIII. STACK/VENT RESTRICTIONS

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 Diameter (inches) | Minimum Height Above Ground Level (feet) | 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).

# EU-DIENGINE
# EMISSION UNIT CONDITIONS

## DESCRIPTION

One new uncertified non-emergency, spark ignition, stationary, 510 horsepower (380kilowatt), 4 stroke lean burn (4SLB), reciprocating internal combustion engine (RICE), used to produce electricity, fired by digester gas, manufactured on February 27, 2013 and rebuilt on April 15, 2016, subject to 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ.

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

Catalytic reduction

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. CO | 5.0 g/hp-hr or 610 ppmvd @ 15% O2 | Test Protocol* | EU-DIENGINE | SC V.1, VI.1 | **40 CFR 60.4233(e) Table 1** |
| 2. NOx | 2.0 g/hp-hr or 150 ppmvd @ 15% O2 | Test Protocol* | EU-DIENGINE | SC V.1, VI.1 | **40 CFR 60.4233(e) Table 1** |
| 3. VOC | 1.0 g/hp-hr or 80 ppmvd @ 15% O2 | Test Protocol* | EU-DIENGINE | SC V.1, VI.1 | **40 CFR 60.4233(e) Table 1** |

*Test protocol shall specify averaging time.

## II. MATERIAL LIMIT(S)

1. The heat input provided by digester gas must be equivalent to 10 percent or more of the gross heat input on an annual basis. **(40 CFR 63.6590(b)(ii)(2))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

EU-DIENGINE shall operate in a manner which reasonably minimizes HAP emissions. **(40 CFR 63.6625(c))**

1. If the permittee purchased a non-certified engine or operates a certified engine in a non-certified manner, the permittee shall keep a maintenance plan and records of conducted maintenance for FGNSPSJJJJ and shall, to the extent practicable, maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 60.4243(b)(2)(ii))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain EU-DIENGINE with a fuel meter to monitor and record the daily fuel usage and volumetric flow rate of the digester fuel used. **(40 CFR 63.6625(c))**

## V. TESTING/SAMPLING

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

1. The permittee must conduct an initial performance test within 1 year of engine rebuild and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. **(40 CFR 60.4243(a)(2(iii))**

2. Performance testing shall be conducted according to 40 CFR 60.4244. **(40 CFR 60.4244)**

## 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 for EU-DIENGINE:
   a. All notifications submitted to comply with Subpart JJJJ and all documentation supporting any notification **(40 CFR 60.4245(a)(1))**
   b. Maintenance conducted on EU-DIENGINE **(40 CFR 60.4243(b)(2)(ii), 40 CFR 60.4245(a)(2))**
   c. If the engine is operating in a non-certified manner, documentation that the engine meets emission standards. **(40 CFR 60.4245(a)(4))**

2. The permittee shall record all fuel usage for EU-DIENGINE, including digester gas, on a daily basis with separate fuel meters to measure the volumetric flow rate of each fuel. **(40 CFR 63.6625(c), 40 CFR 63.6655(c))**

3. The permittee shall maintain records of the hours of operation for determining performance testing requirements. **(40 CFR 60.4243)**

## VII. REPORTING

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

2. Semi-annual 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. If testing is required, no less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.2001(f))**

5. The permittee shall submit an annual report to the appropriate AQD District Office by March 15 for reporting period January 1 to December 31. The following information shall be included in this annual report: **(40 CFR 63.6650(b)(5))**
   a. The permittee must demonstrate that the percentage of heat input provided by digester gas is equivalent to 10 percent or more of the total gross heat input for EU-DIENGINE on an annual basis. **(40 CFR 63.6650(g)(1))**
   b. The operating limits provided in this permit, and any deviations from these limits. **(40 CFR 63.6650(g)(2))**

   c. Any problems or errors suspected with the meters. **(40 CFR 63.6650(g)(3))**

**See Appendix 8-1**

## 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 Diameter (inches) | Minimum Height Above Ground Level (feet) | Applicable Requirements |
|---|---|---|---|
| 1. SVDIENGINE | NA | NA | **R 336.1901** |

## IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the federal Standards of Performance for Stationary Spark Ignition Internal Combustion Engines as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ. **(40 CFR Part 60 Subparts A & JJJJ)**

2. A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of §63.6645(f) and the requirements of §§63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart. **(40 CFR 63.6590(b)(ii)(2))**

**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).

# EU-ENCLSD_FLARE
# EMISSION UNIT CONDITIONS

## DESCRIPTION

An enclosed digester gas flare used as back up for the anaerobic digester EU-DIENGINE located at the dairy facility. The flare is capable of burning up to 150 scfm giving a Heat Input Capacity of 5,400,000 Btu/hr when using the estimated higher heating value of the digester gas of 600 Btu/scf.
(PTI 95-12A)

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

Enclosed Flare and fuel SO2 scrubber

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Sulfur dioxide | 0.90 pph[2] | 30-day average | EU-ENCLSD-FLARE | SC VI.1, VI. 2 | **40 CFR 52.21 (c) & (d)** |

## II. MATERIAL LIMIT(S)

1. The permittee shall burn only gas produced by the dairy facility anaerobic digester (digester gas) in the EU-ENCLSD-FLARE.[2] **(40 CFR 52.21(c) & (d))**

2. The hydrogen sulfide (H2S) concentration of the gas exiting the digester shall not exceed 600 ppmv.[2] **(40 CFR 52.21(c) & (d))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU-ENCLSD_FLARE unless a MAP as described in Rule 911(2), is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.[2] **(R 336.1911, 40 CFR 52.21(c) and (d))**

## 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 volumetric flow rate of digester gas burned in EU-ENCLSD-FLARE, on a continuous basis.[2] **(40 CFR 52.21(c) & (d))**

## 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 hydrogen sulfide or total reduced sulfur (TRS) content of the digester gas burned in EU-ENCLSD-FLARE on a quarterly basis by gas sampling. If, after a year, the average of the previous four (4) quarterly concentrations of the hydrogen sulfide or TRS concentration of the digester gas is below 600 ppm (TRS equivalent), the permittee may petition the District Supervisor, Air Quality Division to reduce the frequency of gas sampling and recording the hydrogen sulfide/total reduced sulfur concentration of the digester gas to once each calendar year. If at any time the average of the previous four concentration readings exceeds 600 ppm (TRS equivalent), the permittee shall resume sampling and recording on a quarterly basis and shall review all operating and maintenance activities for the digester gas collection and treatment system along with keeping records of corrective actions taken. Once the average of the previous four concentrations determined from the quarterly readings is maintained below 600 ppm of hydrogen sulfide/TRS concentration in the digester gas for one year after an exceedance, the permittee may resume annual monitoring and recordkeeping. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request.[2] **(40 CFR 52.21(c) & (d))**

## 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, in a satisfactory manner, records of the $H_2S$ content of the digester gas routed to EU-ENCLSD-FLARE as specified in SC V.1. The permittee shall keep all records on file and make them available to the Department upon request.[2] **(40 CFR 52.21 (c) and (d))**

2. The permittee shall continuously monitor and record, in a satisfactory manner, the volumetric flow rate of digester gas burned in the flare. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(40 CFR 52.21(c) & (d))**

3. SO2 emission calculations shall be completed as per Appendix 7-1. Calculations shall be made available to the department upon request.[2] **(40 CFR 52.21(c) & (d))**

**See Appendix 7-1**

## VII. REPORTING

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

2. Semi-annual 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 8-1**

## 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. SV -ENCLSD_FLARE | 18[2] | 7[2] | **40 CFR 52.21 (c) & (d)** |

## 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).

# EU-ETO2
# EMISSION UNIT CONDITIONS

## DESCRIPTION

One (1) ethylene oxide (EtO) sterilizer/aerator located at the Veterinary Medical Center on Wilson Road. The EtO sterilizer uses only 100 percent EtO as a sterilant and is controlled by a catalytic oxidizer located on the roof of the building. (PTI #99-17)

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

Catalytic Oxidizer

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. EtO (CAS No. 75-21-8) | 0.088 pounds per year | 12-month rolling time period as determined at the end of each calendar month | EU-ETO2 | SC VI.3 | R 336.1225, R 336.1702(a) |

## II. MATERIAL LIMIT(S)

1. The permittee shall only use a sterilant gas consisting of 100 percent EtO. **(R 336.1225)**

2. The permittee shall not use more than 100 grams (3.5 ounces) of EtO per sterilization cycle in EU-ETO2. **(R 336.1225, R 336.1702(a))**

3. The permittee shall not perform more than 400 sterilization cycles in EU-ETO2 per 12-month rolling time period. **(R 336.1225, R 336.1702(a))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU-ETO2 unless a malfunction abatement plan (MAP) as described in Rule 911(2), has been submitted within 30 days of permit issuance, and is implemented and maintained. The MAP shall, at a minimum, specify the following:

a. A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.

b. An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.

c. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District

Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU-ETO2 unless each respective closed loop recirculating-fluid vacuum pump, air ejector system, or other method of drawing a vacuum and evacuating the sterilizer chamber and which prevents the discharge of any EtO to a wastewater stream is installed, maintained, and operated in a satisfactory manner on EU-ETO2. **(R 336.1225, R 336.1702(a))**

2. The permittee shall not operate EU-ETO2 unless the catalytic oxidizer is installed, maintained and operated in a satisfactory manner. Satisfactory operation of the catalytic oxidizer includes a minimum EtO control efficiency of 99.9 percent (by weight), a minimum catalyst bed outlet temperature of 290 °F, and a maximum space velocity of 6732 inverse hours. **(R 336.1225, R 336.1702, R 336.1902, R 336.1910)**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a temperature monitoring device to continuously monitor and record the outlet temperature of the catalytic oxidizer catalyst bed, during operation of EU-ETO2. **(R 336.1225, R 336.1702, R 336.1902)**

## V. TESTING/SAMPLING

NA

## VI. MONITORING/RECORDKEEPING

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1225, R 336.1702, R 336.1902)**

2. The permittee shall monitor and record the outlet temperature of the catalytic oxidizer catalyst bed on a continuous basis during operation of EU-ETO2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702, R 336.1902)**

3. The permittee shall keep the following information for EU-ETO2:
   a. The amount of EtO used per cycle.
   b. The number of cycles processed per calendar month and 12-month rolling time period.
   c. EtO mass emission calculations determining the monthly emission rate in pounds per calendar month.
   d. EtO mass emission calculations determining the annual emission rate in pounds per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records using mass balance or an alternate method and format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702, R 336.1902)**

## VII. REPORTING

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

2. Semi-annual 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))**

## 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. SV-ETO | 8 | 44 | **40 CFR 52.21(c) & (d)** |

## IX. OTHER REQUIREMENT(S)

NA

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

# EU-AMMONIA
# EMISSION UNIT CONDITIONS

## DESCRIPTION

A single anhydrous storage tank and any associated handling process, nurse tanks or applicator tanks. The nominal tank storage capacity shall not exceed 30,000 gallons.

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Except where specific requirements of these special conditions are applicable and more stringent, EU-AMMONIA shall comply with the Department Of Labor and Economic Growth General Industry Safety Standards, Part 78. Storage and Handling of Anhydrous Ammonia – (1910.111) hereinafter Rule 7801. A copy of this document, which may be obtained by contacting the Michigan Occupational Safety and Health Administration, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, MI 48909-8143, shall be maintained for inspection at the facility. **(R 336.1901)**

2. The permittee shall not operate EU-AMMONIA unless the inspection and maintenance program specified in Appendix A has been implemented and maintained. **(R 336.1901)**

3. The permittee shall not operate EU-AMMONIA unless an emergency response plan, to be followed in the event of an emergency, has been approved by the local fire department or county emergency response agency and is implemented and maintained. Prior to each spring season, the permittee shall review this plan with the local fire department or emergency response agency and make any necessary updates. **(R 336.1901)**

4. EU-AMMONIA shall be located a minimum of 50 feet from the property line; 300 feet from any existing places of residence or private or public assembly; 500 feet from a school, apartment building, or institutional occupancy; and not less than 1000 feet from a hospital or nursing home. **(R 336.1901)**

5. The permittee shall not operate EU-AMMONIA unless all transfer operations including transport deliveries are performed by a reliable person properly trained and made responsible for proper compliance with all applicable procedures. **(R 336.1901)**

6. Nurse and applicator tank storage shall be no less than 50 feet from the property line; 150 feet from any existing places of residence or private or public assembly; 250 feet from a school, apartment building, or institutional occupancy; and no less than 1000 feet from a hospital or nursing home. **(R 336.1901)**

7. Nurse tank filling shall be done only from a permanent stationary storage tank. **(R 336.1901)**

8. Nurse and applicator tanks shall be filled to no more than 85 percent of liquid capacity by volume. Storage tanks may be filled according to temperature density correction tables in Rule 7801(b)(11) where tanks have a thermometer well and suitable level gauge. **(R 336.1901)**

9. Vapor return lines shall be employed whenever necessary to ensure an accidental release from pressure relief valves will not occur during ammonia transfer operations. **(R 336.1901)**

10. Nitrogen stabilizer shall not be added to any permanent stationary storage tank or to rail or truck transport tanks. **(R 336.1901)**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. All containers shall be fitted with safety relief valves in accordance with Rule 7801(b)(9). Such valves shall be stamped with the date manufactured, and shall be replaced, or re-tested and re-certified, at least every five years or more often if there is evidence of damage or deterioration. **(R 336.1225, R 336.1901)**

2. The permittee shall not operate EU-AMMONIA unless a remotely operated internal or external positive shut-off valve is installed to allow access for emergency shut-off of all flow from stationary storage containers. **(R 336.1225, R 336.1901)**

3. The permittee shall not operate EU-AMMONIA unless a bulkhead, anchorage, or equivalent system is used at each transfer area so that any break resulting from a pull will occur at a predictable location while retaining intact the valves and piping on the plant side of the transfer area. **(R 336.1225, R 336.1901)**

4. The permittee shall not operate EU-AMMONIA unless any liquid lines in rail and transport transfer areas are equipped with back pressure check valves and all liquid lines not requiring a back check valve and all vapor lines are equipped with properly sized excess flow valves. These valves shall be installed on the main container side of the predictable break point at the bulkhead. **(R 336.1225, R 336.1901)**

5. All hoses shall be replaced five years after date of manufacture or more often if there is evidence of damage or deterioration. **(R 336.1225, R 336.1901)**

6. Any vapor or liquid line, exclusive of couplings, requiring venting after ammonia transfer shall be vented through a water trap of 55 gallons minimum size. Safety water shall not be used for this purpose. **(R 336.1225, R 336.1901)**

7. A sign shall be present and conspicuously placed at the facility entrance stating the emergency phone numbers for the owner, primary operator, local and state police, local fire department, and ambulance service. **(R 336.1901)**

## V. TESTING/SAMPLING

NA

## VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall keep, in a satisfactory manner, records of the date, duration, and description of any malfunction or spill occurring from EU-AMMONIA, including the estimated amount of ammonia released into the atmosphere. Do not include trace amounts from normal hose coupling bleed downs. All records shall be kept on file and made available to the Department upon request. **(R 336.1201(3))**

2. The permittee shall keep, in a satisfactory manner, records of the date of annual review and approval of the emergency response plan with the local fire department. All records shall be kept on file and made available to the Department upon request. **(R 336.1201(3))**

**See Appendix 11-1a and 11-1b**

## VII. REPORTING

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

2. Semi-annual 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 notify the Pollution Emergency Alert System (PEAS) 1-800-292-4706 and/or the AQD District Supervisor immediately of any abnormal release of anhydrous ammonia from EU-AMMONIA. A normal release includes only hose coupling bleed downs, operation of hydrostatic relief valves, and normal pressure relief from the safety relief valve(s). Relief due to overfilling is not normal. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1201(3), R 336.1901)**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

1. The permittee shall not replace or modify any portion of EU-AMMONIA, nor install new equipment unless all of the following conditions are met: **(R 336.1201)**

   a) The permittee shall update the general permit by submitting a new Process Information Form (EQP5731) to the Permit Section and District Supervisor, identifying the existing and new equipment a minimum of 10 days before the replacement, modification, or installation of new equipment.

   b) The permittee shall continue to meet all general permit to install applicability criteria after the replacement, modification or installation of new equipment is complete.

   c) The permittee shall keep records of the date and description of any replacement, modification, or installation of new equipment at the source. All records shall be kept on file for a period of at least five years and made available to the Department upon request.

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

# 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 |
|---|---|---|
| FG-COLDCLEANER | Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979. | EU-453DEG01<br>EU-DEGLANDS1-2<br>EU-DEGPHYSP<br>EU-DEGTRANS<br>EU-DEGGOLFC |
| FG-RULE 287(c) | Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 287(c). | EU-SPRAYBOOTH1,<br>EU-SPRAYBOOTH2,<br>EU-SPRAYBOOTH3 |
| FG-RULE 290 | Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 290. | EU-BIPROCESS |
| FG-NSPS-IIII | Stationary compression ignition emergency generators fired by diesel fuel, manufactured/installed on or after 2006. | EU-FRIBGEN1, EU-FRIBGEN2, EU-BIGEN1, EU-BIGEN2 |
| FG-NSPS-JJJJ | Stationary spark ignition lean burn reciprocating internal combustion engines combusting natural gas fuel, that were constructed, on or after June 12, 2006, and used to power emergency use generators. | EU596GEN01, EU-WTPGEN, EU-MUSICBLGGEN, EU-ISTBGEN1, EU-ISTBGEN2, EU-ISTBGEN3. EU-FLNGEN, EU-WSFGEN |
| FG-EMERGEN>500ZZZZ | Existing compression ignition Engine Units greater than 500 HP. | EU055GEN01, EU069GEN01, EU160GEN02, EU215GEN01 |

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| FG-EMERGEN≤500ZZZZ | Existing stationary spark ignition (SI) or compression ignition (CI) emergency reciprocating internal combustion engines (RICE), with a rating of less than or equal to 500 HP and constructed prior to June 12, 2006. | EU-003GEN01, EU-006GEN01, EU-016GEN01, EU-022GEN01, EU-028GEN01, EU-049GEN01, EU-077GEN01, EU-080GEN01, EU-081GEN01, EU-081GEN02, EU-083GEN01, EU-085GEN01, EU-086GEN01, EU-086GEN02, EU-087GEN01, EU-132GEN01, EU-133GEN01, EU-160GEN01, EU-163GEN01, EU-170GEN01, EU-170GEN02, EU-170GEN03, EU-175GEN01, EU-178GEN01, EU-181GEN01, EU-186GEN01, EU-186GEN02, EU-200GEN01, EU-203GEN02, EU-203GEN01, EU-210-PORGEN-1, EU-210-PORGEN-10, EU-210-PORGEN-2, EU-210-PORGEN-5, EU-210-PORGEN-6, EU-210-PORGEN-7, EU-210-PORGEN-8, EU-210-PORGEN-9, EU-210-PORGEN-3, EU-210GEN-CT85, EU-210-PORGEN-11, EU-211GEN01, EU-216GEN01, EU218GEN01, EU-219GEN01, EU-222GEN01, EU-472DGEN01, EU-479GEN01, EU-577GEN01, EU-601GEN01 |
| FG-WSF | Waste Storage Facility (WSF) that receives, stores, and consolidates laboratory waste before sending it out for disposal. | EU-CHEM, EU-CONSOL1, and EU-CONSOL2 |
| FG-BOILERMACT | Boilers/process heaters located at the Main Campus that are designed to burn gas 1 fuels and subject to 40 CFR Part 63, Subpart DDDDD (“Boiler MACT”). | Various (See Appendix 12-1) |
| FG-BIBOILERS | Three (3) Cleaver Brooks natural gas / No. 2 fuel oil fired boilers located at the Biotechnology Institute. | EU-BIBOILER1, EU-BIBOILER2, EU-BIBOILER3 |
| FG-TESTCELLS | 2 engine test cells capable of testing engines up to 750 HP for unleaded gasoline/ethanol engines and 1,000 HP for No.2 diesel engines. Emissions are controlled by catalytic converters. | EU-TESTCELL1, EU-TESTCELL2 |

# FG-COLDCLEANER
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

**Emission Units:** EU-453DEG01, EU-DEGLANDS1-2, EU-DEGPHYSP, EU-DEGTRANS, EU-DEGGOLFC

## 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)

1. The permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**

2. Cover will remain closed when not in use or when allowing parts to soak. **(R 336.1611(2)(a), R336.1707(3))**

3. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
   a. The air/vapor interface of the cold cleaner is no more than ten square feet. **(R 336.1281(h))**
   b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**

2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**

3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**

4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**

5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees Fahrenheit, then the cold cleaner must comply with at least one of the following provisions:
   a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**
   b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**
   c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

## 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. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**

2. The permittee shall maintain the following information on file for each cold cleaner: **(R 336.1213(3))**
   a. A serial number, model number, or other unique identifier for each cold cleaner.
   b. The date the unit was installed, manufactured or that it commenced operation.
   c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
   d. The applicable Rule 201 exemption.
   e. The Reid vapor pressure of each solvent used.
   f. If applicable, the option chosen to comply with Rule 707(2).

3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**

4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

## VII. REPORTING

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

2. Semi-annual 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 8-1**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

NA

# FG-RULE 287(c)
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 287(c).

**Emission Units:** EU-SPRAYBOOTH1, EU-SPRAYBOOTH2, EU-SPRAYBOOTH3

## POLLUTION CONTROL EQUIPMENT

Particulate control filter

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

| Material | Limit | Time Period/ Operating Scenario | Equipment | Underlying Applicable Requirement |
|---|---|---|---|---|
| 1. Coatings | 200 gallons | Per month, as applied, minus water, per emission unit | NA | **R 336.1287(c)(i)** |

## III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. Any exhaust system that serves only coating spray equipment shall be equipped with a properly installed and operating particulate control system. **(R 336.1287(c)(ii))**

## 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 maintain records of the following information for each emission unit for each calendar month using the methods outlined in the EGLE, AQD Rule 287(c), Permit to Install Exemption Record form (EQP 3562) or in a format acceptable to the AQD District Supervisor. **(R 336.1213(3))**
   a. Volume of coating used, as applied, minus water, in gallons. **(R 336.1287(c)(iii))**
   b. Documentation of any filter replacements for exhaust systems serving coating spray equipment. **(R 336.1213(3))**

**See Appendix 4-1**

## VII. REPORTING

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

2. Semi-annual 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 8-1**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

NA

# FGRULE290
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a and Rule 290. Emission units installed/modified before December 20, 2016, may show compliance with Rule 290 in effect at the time of installation/modification.

**Emission Units installed on or after December 20, 2016:** Any future emission unit that meets the requirements of this flexible group.)

**Emission Units installed prior to December 20, 2016:** EU-BIPROCESS

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

1. Each emission unit that emits only noncarcinogenic volatile organic compounds or noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, if the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively. **(R 336.1290(2)(a)(i))**

2. Any emission unit for which CO2 equivalent emissions are not more than 6,250 tons per month (for units installed on or after December 20, 2016) and for which the total uncontrolled or controlled emissions of all other air contaminants are not more than 1,000 or 500 pounds per month, respectively, and all the following criteria listed below are met: **(R 336.1290(2)(a)(ii))**
   a. For toxic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 0.04 micrograms per cubic meter and less than 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively. **(R 336.1290(2)(a)(ii)(A))**
   b. For toxic air contaminants with initial risk screening levels greater than or equal to 0.04 microgram per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively. **(R 336.1290(2)(a)(ii)(B))**
   c. The emission unit shall not emit any toxic air contaminants, excluding non-carcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with an initial threshold screening level or initial risk screening level less than 0.04 microgram per cubic meter. **(R 336.1290(2)(a)(ii)(C))**
   d. For total mercury, the uncontrolled or controlled emissions shall not exceed 0.01 pounds per month from emission units installed on or after December 20, 2016. **(R 336.1290(2)(a)(ii)(D))**
   e. For lead, the uncontrolled or controlled emissions shall not exceed 16.7 pounds per month from emission units installed on or after December 20, 2016. **(R 336.1290(2)(a)(ii)(E))**

3. Any emission unit that emits only particulate air contaminants without initial risk screening levels and other air contaminants that are exempted under Rule 290(2)(a)(i) or Rule 290(2)(a)(ii), if all the following provisions are met: **(R 336.1290(2)(a)(iii))**
   a. The particulate emissions are controlled by an appropriately designed and operated fabric filter collector or an equivalent control system which is designed to control particulate matter to a concentration of less than or equal to 0.01 pound of particulate per 1,000 pounds of exhaust gases and which does not have exhaust gas flow rate more than 30,000 actual cubic feet per minute. **(R 336.1290(2)(a)(iii)(A))**
   b. The visible emissions from the emission unit are not more than 5% opacity in accordance with the methods contained in Rule 303. **(R 336.1290(2)(a)(iii)(B))**

c. The initial threshold screening level for each particulate toxic air contaminant, excluding nuisance particulate, is more than 2.0 micrograms per cubic meter. **(R 336.1290(2)(a)(iii)(C))**

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The provisions of Rule 290 apply to each emission unit that is operating pursuant to Rule 290. **(R 336.1290)**

## 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))**

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 maintain records of the following information for each emission unit for each calendar month using the methods outlined in the EGLE, AQD Rule 290; Permit to Install Exemption Record form (EQP 3558) or in a format that is acceptable to the AQD District Supervisor. **(R 336.1213(3))**
   a. Records identifying each air contaminant that is emitted. **(R 336.1213(3))**
   b. Records identifying if each air contaminant is controlled or uncontrolled. **(R 336.1213(3))**
   c. Records identifying if each air contaminant is either carcinogenic or non-carcinogenic. **(R 336.1213(3))**
   d. Records identifying the ITSL and IRSL, if established, of each air contaminant that is being emitted under the provisions of Rules 290(2)(a)(ii) and (iii). **(R 336.1213(3))**
   e. Records of material use and calculations identifying the quality, nature, and quantity of the air contaminant emissions in sufficient detail to demonstrate that the actual emissions of the emission unit meet the emission limits outlined in this flexible group and Rule 290. Volatile organic compound emissions from units installed on or after December 20, 2016, shall be calculated using mass balance, generally accepted engineering calculations, or another method acceptable to the AQD District Supervisor. **(R 336.1213(3), R 336.1290(2)(d))**
   f. Records are maintained on file for the most recent 2-year period and are made available to the department upon request. **(R 336.1213(3), R 336.1290(2)(e))**

2. The permittee shall maintain an inventory of each emission unit that is exempt pursuant to Rule 290. This inventory shall include the following information. **(R 336.1213(3))**
   a. The permittee shall maintain a written description of each emission unit as it is maintained and operated throughout the life of the emission unit. **(R 336.1290(2)(c), R 336.1213(3))**
   b. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(2)(a)(iii), the permittee shall maintain a written description of the control device, including the designed control efficiency and the designed exhaust gas flow rate. **(R 336.1213(3))**

3. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(2)(a)(iii), the permittee shall perform a monthly visible emission observation of each stack or vent during routine operating conditions. This observation need not be performed using Method 9. The permittee shall keep a written record of the results of each observation. **(R 336.1213(3))**

## 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)

NA

## IX. OTHER REQUIREMENT(S)

NA

# FG-NSPS-IIII
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Emergency generators fired by diesel fuel, manufactured/installed on or after year of 2006.

**Emission Units:** EU-FRIBGEN1, EU-FRIBGEN2, EU-BIGEN1, EU-BIGEN2

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. NMHC+$NO_x$ | 6.4 g/KW-hr | Hourly | Each engine in FG-NSPS-IIII | SC V.1<br>SC V.2<br>SC VI.1 | **40 CFR 60.4205(b)** |
| 2. CO | 3.5 g/KW-hr | Hourly | Each engine in FG-NSPS-IIII | SC V.1<br>SC V.2<br>SC VI.1 | **40 CFR 60.4205(b)** |
| 3. PM | 0.20 g/KW-hr | Hourly | Each engine in FG-NSPS-IIII | SC V.1<br>SC V.2<br>SC VI.1 | **40 CFR 60.4205(b)** |

## II. MATERIAL LIMIT(S)

1. The permittee shall burn only diesel fuel, in each engine in FG-NSPS-IIII with the maximum sulfur content of 15 ppm (0.0015 percent) by weight and either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume. **(40 CFR 60.4207(b), 40 CFR 80.510(b))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. In order to be considered an emergency generator, the permittee must operate each engine in FG-NSPS-IIII according to the requirements below. Any operation other than this is prohibited. If not operated according to these requirements, then the engine must meet all requirements in 40 CFR Part 60, Subpart IIII for non-emergency engines: **(40 CFR 60.4211(f))**
   a. There is no time limit on the use of the emergency engines in emergency situations.
   b. The permittee may operate each engine in FG-NSPS-IIII for the purposes specified in SC III.1.b.i below for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by SC III.1.c counts as part of this 100 hours per calendar year.
      i. FG-NSPS-IIII may be operated for maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.
   c. The permittee may operate each unit in FG-NSPS-IIII up to 50 hours per calendar year in non-emergency situations, but these 50 hours of operation are counted towards the 100 hours per calendar year allowed in SC III.1.b. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, 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. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the requirements in 40 CFR 60.4211(f)(3)(i) are met.

2. The permittee shall install, maintain, and operate each unit of FG-NSPS-IIII according to the manufacturer's written instructions, or procedures developed by the owner/operator and approved by the engine manufacturer, over the entire life of the engine. **(40 CFR 60.4206, 40 CFR 60.4211)**

3. The permittee shall do all the following for a certified engine, except as permitted in 40 CFR 60.4211(g): **(40 CFR 60.4211(a))**
   a. Operate and maintain each engine and control device (if any) in FG-NSPS-IIII according to the manufacturer's emission-related written instructions;
   b. Change only those emissions-related settings that are permitted by the manufacturer; and
   c. Meet the requirements of 40 CFR Parts 89, 94 and/or 1068, as they apply to each engine in FG-NSPS-IIII.

4. The permittee shall demonstrate compliance with the emission standards specified in Table 1 of 40 CFR Part 60, Subpart IIII for each engine in FG-NSPS-IIII according to one of the following methods: **(40 CFR 60.4205(a), 40 CFR 60.4211(b))**
   a. Purchasing an engine certified according to 40 CFR Part 89 or 40 CFR Part 94, as applicable, to meet the emission standards for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications;
   b. Keeping records of performance test results for each pollutant for a test conducted on a similar engine and using the same test methods specified in Subpart IIII;
   c. Keeping records of engine manufacturer data indicating compliance with the standards;
   d. Keeping records of control device vendor data indicating compliance with the standards;
   e. Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specific in 40 CFR 60.4212, as applicable.

5. If the permittee does not install, configure, operate and maintain the engines in FG-NSPS-IIII and control device(s), if any, according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, compliance must be demonstrated by keeping a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. (In addition, the requirements in SC V.2 must be met.) **(40 CFR 60.4211(g)(2))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each unit in FG-NSPS-IIII with a non-resettable hours meter to track the operating hours. **(40 CFR 60.4209)**

## 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 an initial performance test for each unit in FG-NSPS-IIII within one year after startup of the engine to demonstrate compliance with the emission limits in 40 CFR 60.4205 unless the engine has been certified by the manufacturer and the permittee maintains the engine as required by 40 CFR Part 60, Subpart IIII. If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4212, and the hourly emission rates shall be determined by the average of the acceptable three test runs. **(40 CFR 60.4211, 40 CFR 60.4212, 40 CFR Part 60, Subpart IIII)**

2. If the permittee does not install, configure, operate and maintain the engines in FG-NSPS-IIII and control device(s), if any, according to the manufacturer's emission-related written instructions, or the emission-related settings are changed in a way that is not permitted by the manufacturer, compliance shall be demonstrated by conducting an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after

you change emission-related settings in a way that is not permitted by the manufacturer. The hourly emission rates shall be determined by the average of the acceptable three test runs. **(40 CFR 60.4211(g)(2))**

3. If a performance test is required, no less than 30 days prior to testing, a complete test plan shall be submitted to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001)**

## 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, in a satisfactory manner, a record of testing required in SC V.1, SC V.2, or manufacturer's certification documentation indicating that each unit in FG-NSPS-IIII meets the applicable emission limitations contained in the federal Standards of Performance for New Stationary Sources 40 CFR Part 60, Subpart IIII. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211, 40 CFR 60.4214)**

2. The permittee shall keep, in a satisfactory manner, fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil used in FG-NSPS-IIII, demonstrating that the fuel sulfur content meets the requirement of 40 CFR 80.510(b). The certification or test data shall include the name of the oil supplier or laboratory, and the sulfur content of the fuel oil. **(40 CFR 80.510(b))**

3. The permittee shall monitor and record the total hours of operation and the hours of operation during non-emergencies for each unit of FG-NSPS-IIII, on a calendar year time period basis, in a manner acceptable to the AQD District Supervisor. The permittee shall document how many hours are spent for emergency operation of each unit of FG-NSPS-IIII, including what classified the operation as emergency and how many hours are spent for non-emergency operation. **(40 CFR 60.4211, 40 CFR 60.4214)**

4. If the permittee does not install, configure, operate and maintain the engines in FG-NSPS-IIII and control device(s), if any, according to the manufacturer's emission-related written instructions, or the emission-related settings are changed in a way that is not permitted by the manufacturer, maintenance records shall be kept as stated in SC III.5 and in accordance with 40 CFR 63.4211(g)(2). **(40 CFR 60.4211(g)(2))**

## 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 must submit an initial notification as required in 40 CFR 63.6645(f) for each engine in FG-NSPS-IIII. The notification must include the information in 40 CFR 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions (40 CFR 63.6590(b)). **(40 CFR 63.6645(f))**

**See Appendix 8-1**

## 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 Diameter/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 provisions of the federal standards of Performance for new Stationary Sources as specified in 40 CFR Part 60, Subparts A & IIII, as they apply to FG-NSPS-IIII. **(40 CFR Part 60, Subparts A & IIII)**

2. 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 ZZZZ, as they apply to FG-NSPS-IIII. **(40 CFR Part 63, Subparts A & ZZZZ)**

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

# FG-NSPS-JJJJ
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Stationary spark ignition lean burn reciprocating internal combustion engines combusting natural gas fuel, that were constructed, on or after June 12, 2006, and used to power emergency use generators.

**Emission Units:** EU-596GEN01, EU-475GEN01, EU524GEN01, EU-WTPGEN, EU-MUSICBLDGEN, EU-ISTGEN1, EU-ISTGEN2, EU-ISTGEN3, EU-FLNGEN, EU-WSFGEN

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. $NO_x$ | 2.0 g/hp-hr or 160 ppm @ 15% O2 | Three 1 hour runs at ±10% of 100% peak load | Each engine in FG-NSPS-JJJJ | SC VI.2<br>SC V.1 | **40 CFR 60.4233(e)<br>40 CFR 60.4244(c)<br>40 CFR Part 60 Subpart JJJJ, Table 1** |
| 2. CO | 4.0 g/hp-hr or 540 ppm @ 15% O2 | Three 1 hour runs at ±10% of 100% peak load | Each engine in FG-NSPS-JJJJ | SC VI.2<br>SC V.1 | **40 CFR 60.4233(e)<br>40 CFR 60.4244(c)<br>40 CFR Part 60 Subpart JJJJ, Table 1** |
| 3. VOC* | 1.0 g/hp-hr or 86 ppm @ 15% O2 | Three 1 hour runs at ±10% of 100% peak load | Each engine in FG-NSPS-JJJJ | SC VI.2<br>SC V.1 | **40 CFR 60.4233(e)<br>40 CFR 60.4244(c)<br>40 CFR Part 60 Subpart JJJJ, Table 1** |

*VOC average does not include formaldehyde per 40 CFR Part 60, Subpart JJJJ, Table 1 sub noted.

## II. MATERIAL LIMIT(S)

1. The permittee shall burn only pipeline quality natural gas, in FG-NSPS-JJJJ. **(R 336.1205(1)(a)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must operate units in FG-NSPS-JJJJ according to the following: **(40 CFR 60.4243(d))**
   a. There is no time limit on the use in emergency situations.
   b. For non-emergency situations; not more than 100 hours per calendar year for any combination of:
      i. Maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per year.

ii. Up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing in SC III.1.b. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply non-emergency power as part of a financial arrangement with another entity**.**

2. The permittee shall operate and maintain each FG-NSPS-JJJJ engine such that it meets the emission limits in SC I.1, SC I.2, and SCI.3 over the entire life of the engine. **(40 CFR 60.4234)**

3. For Certified engines, the permittee shall operate and maintain FG-NSPS-JJJJ according to the manufacturer's emission-related written instructions. The permittee shall also meet the requirements as specified in 40 CFR Part 1068, Subparts A through D, as they apply to FG-NSPS-JJJJ. If the engine's settings are adjusted according to and consistent with the manufacturer's instructions, FG-NSPS-JJJJ will be considered in compliance. **(40 CFR 60.4243(a) and 40 CFR 60.4243(b)**

4. If the permittee purchased a non-certified engine or has a certified engine operating in a non-certified manner, the permittee shall test according to SC V.1 , will keep a maintenance plan for FG-NSPS-JJJJ, and shall maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 60.4243(b)(2), 40 CFR 60.4243(a)(2)(ii))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. If any engine included in FG-NSPS-JJJJ does not meet the standards applicable to non-emergency engines, the permittee shall equip and maintain FG-NSPS-JJJJ with non-resettable hours meters to track the operating hours. **(40 CFR 60.4237)**

## V. TESTING/SAMPLING

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

1. For any non-certified engine as per SC III.4, the permittee shall conduct an initial performance test for FG-NSPS-JJJJ within one year after startup of the engine to demonstrate compliance with the applicable emission limits contained in SC I.1, SC I.2, and SC I.3. If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4244 to demonstrate compliance with 40 CFR 60.4230 Table 1 and permit limits. **(40 CFR 60.4243(a)(2)(ii) and (f), 40 CFR 60.4243(b)(2)(i), 40 CFR 60.4244)**

## 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 hours of operation of FG-NSPS-JJJJ during emergencies and non-emergencies as allowed in SC III.1., on a calendar year basis, in a manner acceptable to the District Supervisor, Air Quality Division. The permittee shall record the time of operation of FG-NSPS-JJJJ and the reason it was in operation during that time. **(R 336.1213(3))**

2. The permittee shall keep records of the following information for FG-NSPS-JJJJ:
   a. All notifications submitted to comply with 40 CFR Part 60, Subpart JJJJ and all documentation supporting any notification.
   b. Maintenance conducted on FG-NSPS-JJJJ.
   c. If FG-NSPS-JJJJ is a certified engine, documentation from the manufacturer that the FG-NSPS-JJJJ is certified to meet the emission standards and information as required in 40 CFR Parts 90, 1048, 1054, and 1060, as applicable.
   d. If FG-NSPS-JJJJ is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2), documentation of testing required in SC V.1 that FG-NSPS-JJJJ meets the emission standards. **(40 CFR 60.4245(a))**

**See Appendix 4-1**

## VII. REPORTING

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

2. Semi-annual 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. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.2001(2))**

5. For newly installed engines, the permittee must submit an initial notification as required in 40 CFR 60.7(a)(1), if FG-NSPS-JJJJ has not been certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231. The notification must include the following information: **(40 CFR 60.4245(c))**
   a. Name and address of the owner or operator;
   b. The address of the effected source;
   c. FG-NSPS-JJJJ information including make, model, engine family, serial number, model year maximum engine power, and engine displacement;
   d. FG-NSPS-JJJJ emission control equipment; and
   e. Fuel used in FG-NSPS-JJJJ

6. The permittee must submit an initial notification as required in 40 CFR 63.6645(f) for each engine in FG-NSPS-JJJJ. The notification must include the information in 40 CFR 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions (40 CFR 63.6590(b)). **(40 CFR 63.6645(f))**

**See Appendix 8-1**

## 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 provisions of the federal Standards of Performance for Stationary Spark Ignition Internal Engines as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to FG-NSPS-JJJJ. **(40 CFR Part 60, Subparts, A & JJJJ)**

2. The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR, Part 63, Subpart ZZZZ) as they apply to FG-NSPS-JJJJ. **(40 CFR Part 63, Subparts A & 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).

# FG-EMERGEN>500ZZZZ
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Existing stationary spark ignition (SI) or compression ignition (CI) emergency reciprocating internal combustion engines (RICE), with a rating of less than or equal to 500 HP and constructed prior to June 12, 2006.
**Emission Units:** EU055GEN01, EU069GEN01, EU160GEN02, EU215GEN01

## 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 each engine in FG-EMERGEN>500ZZZZ as necessary for emergency use with no time limit. The permittee may also operate each engine for no more than 100 hours per calendar year for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. Emergency engines may operate up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply non-emergency power as part of a financial arrangement with another entity. **(40 CFR 63.6640(f))**

## 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))**

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 record the following information for each instance that an engine in FG-EMERGEN>500ZZZZ is operated. **(R 336.1213(3)(b))**
   a. Beginning and ending dates.
   b. Total number of operational hours.
   c. Indicate whether operation was for emergency, readiness testing, maintenance checks, or other non-emergency use.
   d. Reason for use (example: for an emergency - loss of electrical due to down power lines).

**See Appendix 4-1**

## VII. REPORTING

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

2. Semi-annual 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 8-1**

## 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 provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ, for Stationary Reciprocating Internal Combustion Engines by the initial compliance date. **(40 CFR 63.6595, 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).

# FG-EMERGEN≤500ZZZZ
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Existing stationary spark ignition (SI) or compression ignition (CI) emergency reciprocating internal combustion engines (RICE), with a rating of less than or equal to 500 HP and constructed prior to June 12, 2006.

**Emission Units:** EU-003GEN01, EU-006GEN01, EU-016GEN01, EU-022GEN01, EU-028GEN01, EU-049GEN01, EU-077GEN01, EU-080GEN01, EU-081GEN01, EU-081GEN02, EU-083GEN01, EU-085GEN01, EU-086GEN01, EU-086GEN02, EU-087GEN01, EU-132GEN01, EU-133GEN01, EU-160GEN01, EU-163GEN01, EU-170GEN01, EU-170GEN02, EU-170GEN03, EU-175GEN01, EU-178GEN01, EU-181GEN01, EU-186GEN01, EU-186GEN02, EU-200GEN01, EU-203GEN01, EU-203GEN02, EU-210-PORGEN-1, EU-210-PORGEN-10, EU-210-PORGEN-2, EU-210-PORGEN-5, EU-210-PORGEN-6, EU-210-PORGEN-7, EU-210-PORGEN-8, EU-210-PORGEN-9, EU-210-PORGEN-3, EU-210GEN-CT85, EU-210-PORGEN-11, EU-211GEN01, EU-216GEN01, EU-218GEN01, EU-219GEN01, EU- 222GEN01, EU-472DGEN01, EU-479GEN01, EU-577GEN01, EU-601GEN01

## 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)

1. For compression ignition RICE in FG-EMERGEN≤500ZZZZ with a site rating of more than 100 HP and a displacement of less than 30 liters per cylinder that uses diesel fuel, the permittee shall burn only diesel fuel with the maximum sulfur content of 15 ppm (0.0015 percent) by weight; and a minimum cetane index of 40, or a maximum aromatic content of 35 volume percent. Any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted. **(40 CFR 63.6604(b) and 40 CFR 80.510(b))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall comply with the following requirements for each RICE in FG-EMERGEN≤500ZZZZ: **(40 CFR 63.6602, 40 CRF 63 Subpart ZZZZ Table 2C Items 1 & 6)**
   a. Change oil and filter every 500 hours of operation or annually, whichever comes first;
   b. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary;
   c. For compression ignition, inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary;
   d. For spark ignition, inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

2. If a RICE in FG-EMERGEN≤500ZZZZ is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements in S.C. III.1, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work

practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. The permittee shall report any failure to perform the management practice required and the federal, state or local law under which the risk was deemed unacceptable. **(40 CFR 63 Subpart ZZZZ Table 2C)**

3. The permittee shall demonstrate continuous compliance with the operating limitations for each RICE in FG-EMERGEN≤500ZZZZ by the following:
   a. Any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year for each RICE, is prohibited; **(40 CFR 63.6640(f)**
   b. There is no time limit on the use of emergency stationary RICE in emergency situations; **(40 CFR 63.6640(f)(1))**
   c. The permittee may operate each RICE up to 100 hours per calendar year for the purpose of:
      i. Maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year; **(40 CFR 63.6640(f)(2)(i)**

   d. Each RICE may operate up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, 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))**

4. Each RICE in FG-EMERGEN≤500ZZZZ shall be maintained and operated per the manufacturer's emission related written instructions or develop a maintenance plan which must provide for the maintenance and operation of the engine in a manner consistent with good air pollution control practices for minimizing emissions. **(40 CFR 63.6625(e), 40 CFR 63.6640(a), 40 CFR Part 63, Subpart ZZZZ, Table 6 Item 9)**

5. The permittee shall minimize the startup time of each RICE in FG-EMERGEN≤500ZZZZ to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. The permittee shall also minimize the time spent at idle during startup. **(40 CFR 63.6625(h))**

6. Each engine under FG-EMERGEN≤500ZZZZ must be in compliance at all times with the operating and other requirements that apply. **(40 CFR 63.6605(a)**

7. At all times, the permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard 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 source. **(40 CFR 63.6605(b))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each RICE in FG-EMERGEN≤500ZZZZ with a non-resettable hour meter to track the number of hours of operation. **(40 CFR 63.6625(f))**

## V. TESTING/SAMPLING

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

1. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement as specified in SC III.1(a). The oil analysis must be performed at the same frequency specified for changing the oil in SC III.1(a). The analyzing program must analyze the Total Acid Number (spark ignition), Total Base Number (compression ignition), viscosity, and percent water content. The condemning limits for these parameters are as follows:
   a. For spark ignition, Total Acid Number (spark ignition) increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new;
   b. For compression ignition, Total Base Number (compression ignition) is less than 30 percent of the Total Base Number of the oil when new;
   c. Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or
   d. Percent water content (by volume) is greater than 0.5.

   If none of the condemning limits are exceeded, the permittee is not required to change the oil. If any of the limits are exceeded, the permittee must change the oil within 2 business 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 2 business days of receiving results or before commencing operation, whichever is later. **(40 CFR 63.6625(i) & (j))**

## VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii), 40 CFR 63.6660)**

1. The permittee shall keep the following records in a satisfactory manner for each engine in FG-EMERGEN≤500ZZZZ:
   a. Records to demonstrate continuous compliance with operating limitations in SC III.1. **(40 CFR 63.6655(d)**
   b. Records of all required maintenance performed on the air pollution control and monitoring equipment (if any). **(40 CFR 63.6655(a)(4))**
   c. Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or of the air pollution control and monitoring equipment if any. **(40 CFR 63.6655(a)(2)**
   d. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment if any to its normal or usual manner of operation. **(40 CFR 63.6655(a)(5))**
   e. Records of the maintenance conducted in order to demonstrate that the stationary RICE and after-treatment control device (if any) were operated and maintained according to the manufacturer's emission-related operation and maintenance instructions, or operated and maintained according to the developed maintenance plan. **(40 CFR 63.6655(e), 40 CFR 63.6655(d))**
   f. Records of 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 emergency and how many hours were spent during non-emergency operation. If the engines are used for demand response operation, or where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency, or to supply power as part of a financial arrangement with another entity, the permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes. **(40 CFR 63.6655(f))**
   g. If using the oil analysis program identified in SC V. 1., the permittee must keep records of the parameters that are analyzed, , the results of the analysis, and the oil changes for each engine. The analysis program must be part of the maintenance plan for each engine. **(40 CFR 63.6625(i) & (j))**

**See Appendix 4-1**

## VII. REPORTING

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

2. Semi-annual 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))**

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 8-1**

## 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 provisions of the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ. **(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).

# FG-WSF
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Waste Storage Facility (WSF) that receives, stores, and consolidates laboratory waste before sending it out for disposal. (PTI 175-11)

**Emission Units:** EU-CHEM, EU-CONSOL1, and EU-CONSOL2

## 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)

1. The permittee shall not consolidate benzyl chloride, ethylene dibromide, or hexachlorobutadiene in FG-WSF.[1] **(R 336.1225)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not consolidate waste in more than one FG-WSF unit at a time.[1] **(R 336.1225)**

2. The permittee shall not consolidate waste in FG-WSF for more than 300 hours per 12-month rolling time period as determined at the end of each calendar month.[2] **(R 336.1225, R 336.1702(a))**

3. The permittee shall post, in a conspicuous place in FG-WSF, a notice stating that benzyl chloride, ethylene dibromide, or hexachlorobutadiene are not allowed to be consolidated in FG-WSF.[1] **(R 336.1225)**

## 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))**

NA

**See Appendix 5-1**

## VI. MONITORING/RECORDKEEPING

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

1. Every 12 months the permittee shall conduct an ambient air monitoring study in a manner and with instrumentation approved by the AQD Air Monitoring Unit. Upon approval of the AQD District Supervisor, the permittee may change the frequency of the ambient air monitoring. All ambient air monitoring data shall be kept on file at the facility and made available to the Department upon request. [1] **(R 336.1225)**

2. The permittee shall keep, in a satisfactory manner, a log of the waste. The log will state the classification of the waste by chemical name, intake date, storage unit ID, disposal shipping date, and number of hours that waste is consolidated in FG-SWF. The log will be tracked via 12-month rolling time period, as determined at the end of each calendar month. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1225, R 336.1702(a))**

3. The permittee shall keep, in a satisfactory manner, a log of each constituent evaluation occurrence. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[1] **(R 336.1225)**

4. The permittee shall keep, in a satisfactory manner, the waste tags for the containers that have been consolidated in FG-WSF. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[1] **(R 336.1225)**

## VII. REPORTING

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

2. Semi-annual 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 8-1**

## 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. SV-CHEM | 6[1] | 18[1] | **R 336.1225** |
| 2. SV-CONSOL1 | 12[1] | 16[1] | **R 336.1225** |
| 3. SV-CONSOL2 | 12[1] | 16[1] | **R 336.1225** |

## 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).

# FG-BOILERMACT
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

New and existing boilers/process heaters located multiple buildings on the Main Campus. These boilers burn gas 1 fuels, are subject to 40 CFR Part 63, Subpart DDDDD ("Boiler MACT"), and are of various sizes. See Appendix 12-1 for individual sizes, types and locations for subject boilers.

**Emission Units:** Various (See Appendix 12-1)

## 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 only burn natural gas, as defined under 40 CFR 63.7575, in each emission unit under FG-BOILERMACT. **(40 CFR 63.7499(l))**

## 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. All applicable boilers will meet the emission limitations, work practice standards, and operating limits as per 40 CFR 63 DDDDD. **(40 CFR 63.7500)**

2. The permittee shall conduct an initial tune-up on applicable existing boilers prior to the compliance date of January 31, 2016. If the unit is not operating on the required date for the tune-up, the tune-up must be conducted within 30 days of startup. **(40 CFR 63.7500 (a))**

3. The permittee shall conduct a one-time energy assessment by a qualified energy assessor on applicable existing boilers prior to the compliance date of January 31, 2016. The energy assessment must include the following with the extent of the evaluation for items appropriate for the on-site technical hours listed in 40 CFR 63.7575. **(40 CFR 63.7510(e), 40 CFR 63.7530(e))**

a. A visual inspection of the boiler or process heater system.
b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.
c. An inventory of major energy use systems consuming energy from affected boilers and process heaters which are under the control of the boiler/process heater owner/operator.
d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.
e. A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified
f. A list of cost-effective energy conservation measures that are within the facility's control.
g. A list of the energy savings potential of the energy conservation measures identified.
h. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame to recouping those investments.

## 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 each notification and report submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report. **(40 CFR 63.7555(a)(1))**

2. The permittee's records shall be in a form suitable and readily available for expeditious review. **(40 CFR 63.7560(a))**

3. The permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. **(40 CFR 63.7560(b))**

4. The permittee shall keep each record on site, or they must be accessible from on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. The records can be kept off site for the remaining 3 years. **(40 CFR 63.7560(c))**

5. The permittee shall maintain satisfactory records to indicate that the facility is only burning natural gas, as defined in 40 CFR 7575, in all boilers. **(R 336.1213(3))**

## VII. REPORTING

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

2. Semi-annual 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. Initial tune-up requirements per SC V. 2 and the one time energy assessment as per SC V.3 notifications must be postmarked by January 31, 2016 for each applicable existing boiler.

5. Continuing compliance reporting shall be conducted as per 40 CFR Part 63, Subpart DDDDD for required initial, semi-annual, annual, biannual, or every 5 years as applicable to each individual boiler with reports postmarked no later than March 15 for the previous year. **(40 CFR 63.7550(c), 40 CFR Part 63, Subpart DDDDD, Table 9)**

**See Appendix 8-1**

## 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).

# FG-BIBOILERS
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Two (2) 16.74 MMBtu and one (1) 10.46 MMBtu natural gas fired boilers with No. 2 fuel oil used as backup located at the Biotechnology Institute. PTI No, 575-85

**Emission Units:** EU-BIBOILER1, EU-BIBOILER2, EU-BIBOILER3

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| $SO_2$ | 1.11 lb/MMBtu [A] heat input | 24-hour period | FG-BIBOILERS | NA | R 336.1401 |
| Visible Emissions | 20% opacity [B] | 6-minute average | FG-BIBOILERS | NA | R 336.1301(1)(a) |

[A] This is equivalent to using oil with 1.0% sulfur content and a heat value of 18,000 BTUs per pound.
[B] Except for one (1) 6-minute average per hour of not more than 27% opacity.

## 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 substitute any fuels for those described in this permit application which would result in an appreciable change in the quality or any appreciable increase in the quantity of the emission of an air contaminant without prior notification to and approval by the Air Quality Division.

2. Permittee shall not use any reclaimed, recycled and/or contaminated fuel(s) without prior notification to and approval by the Air Quality Division.

## 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. Verification of sulfur dioxide emission rates from the boilers by testing, at owner's expense, in accordance with Commission requirements, may be required for operating approval. If a test is required, stack testing procedures and the location of stack testing ports must have prior approval by the District Supervisor, Air Quality Division, and results shall be submitted within 120 days of the written requirement for such verification. **(R 336.2001, R 336.2003, R 336.2004)**

## VI. MONITORING/RECORDKEEPING

1. The fuel usage records shall be kept on file for a period of at least two (2) years and made available to the Air Quality Division upon request.

## VII. REPORTING

NA

## 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 |
|---|---|---|---|
| SV-BIBOILERS | 54 | 69.33 | 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).

# FG-TESTCELLS
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Two engine test cells capable of testing engines up to 750 HP for unleaded gasoline/ethanol engines and 1,000 HP for No.2 diesel engines located at 1149 Engineering Research Court. Emissions are controlled by catalytic converters. (PTI 229-05A)

**Emission Units:** EU-TESTCELL1, EU-TESTCELL2

## POLLUTION CONTROL EQUIPMENT

Catalytic Converters

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Acetaldehyde | 0.12 lb/hr[1] | When burning Ethanol* | EU-TESTCELL1<br>EU-TESTCELL2 | SC V.1 | **R 336.1225** |

* Test Protocol shall specify averaging times

## II. MATERIAL LIMIT(S)

1. The permittee shall burn only unleaded gasoline, ethanol and No.2 diesel fuel in FG-TESTCELLS. Unleaded gasoline contains no more than 5/100ths of a gram of lead per gallon. The No. 2 diesel fuel shall contain no more than 0.05% sulfur.[2] **(R 336.1205(1)(a)&(3), 40 CFR 52.21(c)&(d))**

2. The permittee shall not burn more than 15,000 gallons of No.2 diesel fuel in FG-TESTCELLS per 12-month rolling time period as determined at the end of each calendar month.[2] **(R 336.1205(1)(a)&(3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))**

3. The permittee shall not burn more than a total of 15,000 gallons of combined unleaded gasoline and ethanol fuel in FG-TESTCELLS per 12-month rolling time period as determined at the end of each calendar month.[2] **(R 336.1205(1)(a)&(b), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

**1.** The permittee shall operate each engine in FG-TESTCELLS for research and teaching purposes only and not for the development of engines or engine test services for commercial purposes.[2] **(40 CFR 63.9290(d)(3))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each engine in FG-TESTCELLS with a catalytic converter when burning gasoline.[2] **(R 336.1205(1)(a)&(3), R 336.1225, R 336.1702(a), R 336.1910)**

## 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, if requested by the AQD, verify Acetaldehyde emission rates from EU-TESTCELL1 and EU-TESTCELL2, by testing at owner's expense, in accordance with Department requirements [2] **(R 336.1225, R 336.2001, R 336.2003, R 336.2004)**

## 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 complete all required records in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1205(1)(a)&(3), R 336.1225, R 336.1702(a))**

2. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month fuel use records for FG-TESTCELLS. All records shall be kept on file for a period of at least five years and made available to the Department upon request.[2] **(R 336.1205(1)(a)&(3), R 336.1225, R 336.1702(a))**

3. The permittee shall keep, in a satisfactory manner, records of the maximum lead content in the gasoline fuel to be used in FG-TESTCELLS upon each delivery. The permittee shall keep all records on file and make them available to the Department upon request.[2] **(R 336.1205(1)(a)&(3), 40 CFR 52.21(c)&(d))**

4. The permittee shall keep, in a satisfactory manner, records of the maximum sulfur content in the diesel fuel to be used in FG-TESTCELLS upon each delivery. The permittee shall keep all records on file and make them available to the Department upon request.[2] **(R 336.1205(1)(a)&(3), 40 CFR 52.21(c)&(d))**

## VII. REPORTING

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

2. Semi-annual 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. No less than 90 days prior to any testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.[2] **(R 336.2001, R 336.2003, R 336.2004)**

**See Appendix 8-1**

## 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. SVCELL1 | 10 [2] | 37.83 [2] | **R 336.1225**<br>**40 CFR 52.21(c)&(d)** |
| 2. SVCELL2 | 10 [2] | 37.83 [2] | **R 336.1225**<br>**40 CFR 52.21(c)&(d)** |

## 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).

# 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 1-1. 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 |
| EGLE | Michigan Department of Environment, Great Lakes and Energy | 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 2-1. 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 3-1. Monitoring Requirements

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

The permittee shall use the following approved formats and procedures for the recordkeeping requirements referenced in FG-NSPS-JJJ, FG-EMERGEN>500ZZZZ, and FG-EMERGEN≤500ZZZZ. Alternative formats must be approved by the AQD District Supervisor.

**FG-NSPS-JJJ, FG-EMERGEN>500ZZZZ, FG-EMERGEN≤500ZZZZ**
**EMERGENCY USE RECORDKEEPING**

**Permittee (Source Name)** _____
**ROP Number** _____
**Unit ID**_____
**Location**_____

| **Beginning Date** | **Ending Date** | **Elapsed Hours and Purpose** | | | **Comment** |
|---|---|---|---|---|---|
| | | **Emergency** unlimited hours | ≤ 100 hours annually combined | | |
| | | | **Maintenance & Testing** | **Non-Emergency** ≤ 50 hours annually | |
| 3/14/2009 | 3/16/2009 | 42 | | | Loss of electricity due to tornado damage |
| 4/01/2009 | 4/01/2009 | | 1 | | Monthly Readiness Check |
| 6/27/2009 | 6/27/2009 | | 1 | | Following bearing replacement. |
| | | | | | |
| | | | | | |
| Calendar Year Total | | 42 | 2 | 0 | |

## Appendix 5-1. Testing Procedures

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

## Appendix 6-1. 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-K3249-2016. 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-K3249-2016a is being reissued as Source-Wide PTI No. MI-PTI-K3249-XXXX.

| Permit to Install Number | ROP Revision Application Number | Description of Equipment or Change | Corresponding Emission Unit(s) or Flexible Group(s) |
|---|---|---|---|
| 99-17 * | NA | One (1) ethylene oxide (EtO) sterilizer/aerator using only 100% EtO as a sterilant and is controlled by a catalytic oxidizer | EU-ETO2 FG-STERILIZERS |
| 68-17A * | NA | Updates to stack height and burn rate of consumat pathological waste incinerator located at Farm Lane/Incinerator Road | EU-FLNRINC |
| 575-85 * | NA | Two (2) 400HP boilers and one (1) 250HP boiler capable of combusting natural gas and No. 2 fuel, used to provide heat, humidity, water heating and some process steam in support of various laboratory procedures within the building | EU-BIBOILER1, EU-BIBOILER2, EU-BIBOILER3 |
| 127-07 * | NA | A single anhydrous ammonia storage tank and any associated handling process. The nominal tank storage capacity shall not exceed 30,000 gallons. | EU-AMMONIA |

The following ROP amendments or modifications were issued after the effective date of ROP No. MI-ROP-K3249-2016.

| Permit to Install Number | ROP Revision Application Number/Issuance Date | Description of Change | Corresponding Emission Unit(s) or Flexible Group(s) |
|---|---|---|---|
| 95-12A | 201600197 / March 7, 2017 | Incorporate PTI 95-12A, which is to increase the SO2 emission limit and H2S concentrations in Section 1 - EU-ENCLSD_FLARE because H2S concentrations have been trending upward. | EU-ENCLSD_FLARE |

## Appendix 7-1. Emission Calculations

### EU-ENCLSD-FLARE SO2 Emissions Calculations

| A. Flare Heat Input Capacity (Btu / hr): _____ Btu/hr | B. Heat Content of Biogas (Btu / ft3): _____ Btu/ft3 | C. Fuel H2S Concentration (ppm) _____ ppm |
|---|---|---|
| D. Biogas emission rate (ft3 / hr): (A / B) = | | _____ ft3 / hr |
| E. H2S emission rate (lbs / hr): (D) x (C / 1,000,000 ft3 biogas) x (0.088 lb H2S / ft3 H2S)* = | | _____ lbs H2S / hr |
| F. SO2 emission rate (lbs / hr): (E) x (1.88 lbs SO2 / lb H2S)** = | | _____ **lbs SO2 / hr** |

* (1 lb-mole H2S / 387 ft3 H2S ) x (34 lb H2S / 1 lb-mole H2S) = 0.088 lbs H2S / ft3 H2S
** (1 lb-mole H2S / 34 lb H2S) x (1 lb-mole SO2 / 1 lb-mole H2S) x (64 lbs SO2 / 1 lb-mole SO2) = 1.88 lbs SO2 / lb H2S

EXAMPLE

| A. Flare Heat Input Capacity (Btu / hr): __5,400,000__ Btu/hr | B. Heat Content of Biogas (Btu / ft3): __600__ Btu/ft3 | C. Fuel H2S Concentration (ppm) __600__ ppm |
|---|---|---|
| D. Biogas emission rate (ft3 / hr): (5,400,000 / 600) = | | __9000__ ft3 / hr |
| E. H2S emission rate (lbs / hr): (9000) x (600 / 1,000,000 ft3 biogas) x (0.088 lb H2S / ft3 H2S) = | | _0.4752_ lbs H2S / hr |
| F. SO2 emission rate (lbs / hr): (0.1584) x (1.88 lbs SO2 / lb H2S) = | | _0.893__ **lbs SO2 / hr** |

## Appendix 8-1. Reporting

### A. Annual, Semi-annual, and Deviation Certification Reporting

The permittee shall use the EGLE, AQD, Report Certification form (EQP 5736) and EGLE, 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 9-1. Incinerator Operation and Maintenance Guidelines

### EU-FLNRINC, EU-VDLINC, and EUCREMATORY

1. Designate a trained operator for your unit and make that person responsible for compliance with the air pollution control requirements.

2. Grates should be cleaned before each day's operation (more often if necessary), and the ashes disposed of properly.

3. Preheat the unit with the burners (not with waste) for at least 15 minutes.

4. Do not overload the incinerator. Stay within the given loading rates, and follow the manufacturer's instructions.

5. Schedule charges to minimize opening the charging door as infrequently as possible. Opening the charging door lets cold air in and quenches the fire causing smoke.

6. Burn only the type of wastes that your incinerator has been approved to burn. Follow the manufacturer's instructions to maximize the efficiency of the unit, and to properly burn the waste(s).

7. Keep the combustion air adjusted according to the manufacturer's instructions.

8. Observe the stack frequently and adjust your operation as necessary to eliminate smoke and fly ash.

9. A copy of the manufacturer's manual and this Guideline should be posted near your incinerator.

10. Make quarterly inspections to check and service all of the equipment. If you do not have a qualified person available for proper inspections, a service contract with a reputable manufacturer is advisable.

## Appendix 10-1. Waste Management Plan

EU-VDLINC and EU-FLNRINC

All hazardous waste and low-level radioactive waste will be disposed of in a safe, efficient and ecologically sound manner per rules and regulations administered by the U.S. Environmental Protection Agency (EPA), the Michigan Department of Environment, Great Lakes and Energy (EGLE) and the Nuclear Regulatory Commission (NRC).

The procedures identified in the following plan are biomedical waste specific and intended to prohibit unwanted materials from entering the incinerator. The plan denotes the types of waste streams expected to be generated at the facility, sorting procedure for the waste types, recommended routes of disposal and a recordkeeping system.

**Types of Bio-Medical Waste to be Handled at MDA – Animal Health Diagnostic Laboratory (AHDL)**

- Cultures and stocks of infectious agents and associated biologicals, including laboratory waste, biological production wastes, discarded live and attenuated vaccines, culture dishes, and related devices.

- Liquid animal waste, including blood and blood products and body fluids, but not including urine or materials stained with blood or body fluids.

- Pathological waste from client animals including animal carcasses organs, tissues, body parts, products of conception, and fluids removed during necropsy or other procedures. This type of waste is not considered regulated medical waste under the Michigan Medical Waste Regulatory Act (as per interpretation by EGLE). Additional and directly associate waste consisting of lined fiber drums, plastic bags, personal protective equipment (PPE) and animal bedding.

- Sharps, which means needles, syringes, scalpels, any item that is sharp enough to penetrate the skin and is contaminated with potentially infectious material.

Proposed Segregation, Packaging, Labeling, Collection and Disposal of Bio-Waste at AHDL

At AHDL, the following procedures are used for segregation, packaging, labeling and disposal of biomedical waste materials.

A. General Methods

1. Biomedical waste is generally to be packaged, or contained and located in a manner that prevents and protects the waste from release at the producing facility at anytime before ultimate disposal.

2. Primary containers (other than approved biohazard bags) used for bio-waste collection, storage and disposal are to be labeled with a biohazard symbol, or the words "Biohazardous Waste," or "Pathological Waste" in letters not less than one inch high. The preferable background color of all primary containers is red or orange fluorescent (e.g., biohazard bags).

B. Waste Type-Specific Management Methods

1. All <u>liquid</u> cultures and stocks of materials contaminated with an infectious agent and associated biologicals, including laboratory waste, biological production wastes, discarded live and attenuated vaccines, shall be stored in closable, puncture-resistant containers and **decontaminated by autoclaving**. After autoclaving, liquid decontaminated waste can be disposed of in a sanitary sewer if no other hazardous materials are present (e.g., chemicals and/or radioactive materials).

2. All <u>solid</u> cultures and stocks of materials contaminated with an infectious agent, culture dishes and related devices other than sharps, can be stored in leak-proof, biohazard bags prior and **decontaminated by autoclaving**. If rupture of bags or leakage is possible, the use of a secondary leak-proof container or bag is advised.
3. Biomedical wastes, with the exception of liquids and sharps that have been decontaminated by autoclaving may be disposed of in the lodal (dumpster) if they are securely packaged in leak-proof containers and the biohazard

warning labels have been removed or the container is clearly labeled as decontaminated biohazardous waste. Decontaminated waste in biohazard bags with an "Autoclaved" bag indicator must be placed inside a non-see-through (opaque) plastic bag or other secondary non-transparent container (box) prior to disposal in the lodal. It is imperative that the waste is sufficiently autoclaved (darkening of the indicator) prior to disposal. Only biohazard bags with the "AUTOCLAVED" indicator are currently approved.

4. All blood and blood products and body fluids shall be disposed of by one of the following methods:

    - Flushing down a sanitary sewer;
    - Decontaminated by autoclaving and disposed of in the landfill.

5. Client animal carcasses, body parts and related materials generated during necropsy are considered pathological waste (not regulated medical waste). Animal carcasses not known to contain infectious agents can be rendered or incinerated. Animal carcasses known to contain infectious agents will be incinerated. Animal carcasses, body parts and related materials that are not incinerated immediately will be stored and contained in a way that protects personnel and the environment from exposure to potentially infectious agents. Procedures will include storage in closed containers (e.g., plastic bags, lined fiber drums). Containers holding pathological waste will be incinerated, as will spend animal bedding and used PPE.

6. Sharps will be disposed of in the landfill. Needles, syringes, scalpels etc., need to be discarded into an approved sharps container. An approved sharps container is one that is leakproof, puncture-resistant, closable, bears the biohazard symbol and is manufactured as a sharps container. A sharps container must be permanently closed and disposed of when:

    - It is ¾ full, or
    - Within 90 days of the date that the first sharp was placed in it,

    whichever comes first.

C. Methods of On-Site or Off-Site Storage

Biomedical waste cannot be stored on the premises for more than 90 days. All containers and equipment (e.g., refrigerators) used for storage shall be labeled with the biohazard sticker or the words bio-hazardous waste, or pathological waste in letters not less than one inch high. The preferable background color of all primary bio-waste containers is red or orange fluorescent (e.g., biohazard bags).

D. Methods of On-site Decontamination

Decontamination by Autoclave

Biomedical waste, other than sharps and pathological waste, may be either decontaminated on-site by autoclaving or picked-up by a commercial waste hauler. To use the on-site treatment method, personnel must use an autoclave that has been tested and approved for bio-waste decontamination. Approved autoclaves are labeled with a large colored sign located on or near the autoclave. The colored sign will also list operating parameters for effective waste decontamination for that specific autoclave. All personnel using the autoclave for waste decontamination purposes must follow these parameters.

All autoclaves used for waste decontamination are tested to verify that operating parameters used for waste treatment are sufficient and effective for biomedical waste decontamination.

On-site Incineration

On-site incineration is limited to client animal carcasses, body parts and related materials generated during necropsy at AHDL, which will include up to 5 percent wt. medical waste and animal bedding materials. Personnel operating the incinerator will inspect the waste prior to incineration and refuse any material not considered pathological waste. Type and amount of pathological waste incinerated will be noted in the “Incinerator Load Sheet” on a daily basis.

Use of Sanitary Landfills, Cemeteries and Other Disposal Sites

All autoclaved and decontaminated bio-hazardous waste other than pathological waste will be disposed of in a Type II Sanitary Landfill.

**Biomedical Waste Management Plan**

This proposed plan is subject to additions and modifications as required by the Michigan Medical Waste Regulatory Act (Public Health Code; Part 138). A written medical waste management plan will be on file at the AHDL facility within 90 days after registration with the EGLE Medical Waste Regulatory Program.

## Appendix 11-1a. EU-AMMONIA Inspection and Maintenance Program - Nurse and Applicator Tanks

| Tank Identification: | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Satisfactory? | | | Satisfactory? | | | Satisfactory? | | |
| | Yes | No | Date * | Yes | No | Date * | Yes | No | Date * |
| 1. Tank free of leaks | | | | | | | | | |
| 2. Paint in good condition | | | | | | | | | |
| 3. Valves and fittings free from leaks and in good condition | | | | | | | | | |
| 4. Protective guards in place and in good condition | | | | | | | | | |
| 5. Outlet openings on valves and lines free of dirt and rust with protective caps in place | | | | | | | | | |
| 6. Safety relief valves free of debris with rain caps installed | | | | | | | | | |
| 7. Gages, pressure and liquid level, are operable | | | | | | | | | |
| 8. Excess flow valves installed and in good condition | | | | | | | | | |
| 9. Valves properly labeled “liquid” and “vapor” | | | | | | | | | |
| 10. Vapor and liquid hoses are proper ammonia-type and free of damage or deterioration | | | | | | | | | |
| 11. Hoses, including those on nurse tanks, securely clamped to the nipples | | | | | | | | | |
| 12. Hoses suitably racked to prevent kinking and hose on delivery tanks securely fastened to prevent dragging | | | | | | | | | |
| 13. Tanks securely attached | | | | | | | | | |
| 14. Trailer tongues, hitches, and safety chains in sound condition | | | | | | | | | |
| 15. Nurse tank valves locked or capped if site is unattended or not fenced in | | | | | | | | | |
| 16. Nurse tanks properly labeled | | | | | | | | | |
| 17. Five gallon or larger can filled with clean water for transport vehicles | | | | | | | | | |
| 18. Quick disconnects annually reconditioned | | | | | | | | | |

Date Inspected:_____ Inspector:_____

* For each tank, check if condition is satisfactory or not satisfactory. If condition is not satisfactory, include date when corrected. If condition is not applicable, write NA.

## Appendix 11-1b. EU-AMMONIA Inspection and Maintenance Program – Permanent Ammonia Storage Tank

Permittee shall conduct inspections and complete form at least twice per year, prior to spring and fall application seasons.

| Tank Identification: | Satisfactory? | | | | Satisfactory? | | |
|---|---|---|---|---|---|---|---|
| | Yes | No | Date* | | Yes | No | Date* |
| 1. Tank free of leaks | | | | 16. Protective gloves, boots, suits or slickers available and in good condition | | | |
| 2. Tank supports in good condition (no cracked or crumbled concrete, etc.) | | | | 17. Gas masks with ammonia type canisters and refill canisters within date limits available | | | |
| 3. Paint in good condition | | | | 18. Emergency clean water, shower or 75 gallon tank available nearby | | | |
| 4. Equipment locked when not in use | | | | 19. Hoses in good condition | | | |
| 5. Tank properly labeled | | | | 20. Hoses no older than 5 years from date of manufacture and marked | | | |
| 6. Valves and fittings free from leaks and in good condition | | | | 21. Vapor and liquid hoses are proper ammonia-type and free of damage or deterioration | | | |
| 7. Piping properly supported and guards in place | | | | 22. Hoses suitably racked to prevent kinking | | | |
| 8. Pipes free of physical damage and rust and properly painted | | | | 23. Hoses, including those on nurse tanks, securely clamped to the nipples | | | |
| 9. Employees trained in proper filling procedures | | | | 24. Gages, pressure and liquid level, operable | | | |
| 10. Provisions provided for bleeding of transfer hose from the transport truck | | | | 25. Valves properly labeled “liquid” and “Vapor” | | | |
| 11. Wheels properly chocked on the transport truck or rail tank car while unloading | | | | 26. Safety relief valves within 5 years of manufacture or recertification and marked | | | |
| 12. Information and warning signs displayed and in good condition | | | | 27. Outlet openings on valves and lines free of dirt and rust with protective caps in place | | | |
| 13. Area free of weeds, trash and other unsafe conditions | | | | 28. Safety relief valves free of debris with rain caps installed | | | |
| 14. Unused equipment stored out of the way | | | | 29. Safety relief valve manifold operable | | | |
| 15. Chemical safety goggles available and in good condition | | | | 30. Remote shut-off valve in working order | | | |

Date Inspected:_____ Inspector:_____

* For each item, check if condition is satisfactory or not satisfactory. If condition is not satisfactory, include date when corrected. If condition is not appliable, write NA.

## Appendix 12-1. Boiler Units Summary Table

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-ANGELLUNIV1 | Bryan cast iron 0.52 MMBtu natural gas hot water heater located in the Angell University Services Building SN: M442656 | 1988 | FG-BOILERMACT |
| EU-ANGELLUNIV2 | Bryan cast iron 0.52 MMBtu natural gas hot water heater located in the Angell University Services Building SN: M440421 | 1988 | FG-BOILERMACT |
| EU-ANGELLUNIV3 | Bryan cast iron 0.52 MMBtu natural gas hot water heater located in the Angell University Services Building SN: M440422 | 1988 | FG-BOILERMACT |
| EU-ANGELLUNIV4 | Bryan cast iron 0.52 MMBtu natural gas hot water heater located in the Angell University Services Building SN: M440423 | 1988 | FG-BOILERMACT |
| EU-BEEFCATTLERES | Burnham cast iron 0.17 MMBtu natural gas hot water heater located in the Beef Cattle Research Building SN: 412595 | 2005 | FG-BOILERMACT |
| EU-CENTRALSCHOOLS1 | Weil McLain cast iron 0.33 MMBtu natural gas hot water heater located in the Central Services Building SN: 350683 | 1987 | FG-BOILERMACT |
| EU-CENTRALSCHOOLS2 | Weil McLain cast iron 0.39 MMBtu natural gas hot water heater located in the Central Services Building SN: 350684 | 1987 | FG-BOILERMACT |
| EU-CENTRALSCHOOLS3 | Weil McLain cast iron 0.39 MMBtu natural gas hot water heater located in the Central Services Building SN: 350685 | 1987 | FG-BOILERMACT |
| EU-CROPSCIFIELDLAB1 | Lochinvar watertube 1.40 MMBtu natural gas hot water heater located in the Crop Science Field Lab SN: 379424 | 1996 | FG-BOILERMACT |
| EU-CROPSCIFIELDLAB2 | Lochinvar watertube 1.40 MMBtu natural gas hot water heater located in the Crop Science Field Lab SN: 379425 | 1996 | FG-BOILERMACT |
| EU-CROPSCIFIELDLAB3 | Lochinvar watertube 1.40 MMBtu natural gas hot water heater located in the Crop Science Field Lab SN: 379426 | 1996 | FG-BOILERMACT |
| EU-CROPSCIFIELDLAB4 | Weil McLain cast iron 0.15 MMBtu natural gas hot water heater located in the Crop Science Field Lab SN: 391183 | 1999 | FG-BOILERMACT |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-DAIRYRESBARN1 | NAT'L RADTR cast iron 0.15 MMBtu natural gas hot water heater located in the Dairy Research Barn Lab SN: 209610 | 1965 | FG-BOILERMACT |
| EU-DAIRYRESBARN2 | NAT'L RADTR cast iron 0.13 MMBtu natural gas hot water heater located in the Dairy Research Barn Lab SN: 209611 | 1965 | FG-BOILERMACT |
| EU-DCPAH1 | Johnston firetube 32.38 MMBtu natural gas high pressure steam boiler located at the DCPAH SN: 403061 | 2001 | FG-BOILERMACT |
| EU-DCPAH2 | Johnston firetube 32.38 MMBtu natural gas high pressure steam boiler located at the DCPAH SN: 403062 | 2001 | FG-BOILERMACT |
| EU-ENDOCRINES1 | Lochinvar firetube 0.75 MMBtu natural gas hot water heater located in the Endocrine Swine Research Facility SN: 398619 | 1997 | FG-BOILERMACT |
| EU-ENDOCRINES2 | Lochinvar firetube 0.75 MMBtu natural gas hot water heater located in the Endocrine Swine Research Facility SN: 442649 | | FG-BOILERMACT |
| EU-ENGINEERINGRESCONCRETE1 | Lochinvar watertube 0.99 MMBtu natural gas hot water heater located in the Engineering Research Bldg. SN: 398619 | 2000 | FG-BOILERMACT |
| EU-ENGINEERINGRESCONCRETE2 | Lochinvar watertube 0.99 MMBtu natural gas hot water heater located in the Engineering Research Bldg. SN: 398620 | 2000 | FG-BOILERMACT |
| U-EXECUTIVEDEVLCNTR2 | Teledyne Laars firetube 2.00 MMBtu natural gas hot water heater located in the Executive Development Center SN: 395962 | | FG-BOILERMACT |
| U-EXECUTIVEDEVLCNTR3 | Teledyne Laars firetube 2.00 MMBtu natural gas hot water heater located in the Executive Development Center SN: 395963 | | FG-BOILERMACT |
| EU-EXECUTIVEDEVLCNTR4 | Teledyne Laars firetube 2.00 MMBtu natural gas hot water heater located in the Executive Development Center SN: 395964 | 2000 | FG-BOILERMACT |
| EU-EXECUTIVEDEVLCNTR5 | Teledyne Laars firetube 2.00 MMBtu natural gas hot water heater located in the Executive Development Center SN: 395965 | 2000 | FG-BOILERMACT |
| EU-FOODSTORES1 | Smith cast iron 3.17 MMBtu natural gas hot water heater located at the Food Stores SN: 384194 | 1997 | FG-BOILERMACT |
| EU-FOODSTORES2 | Smith cast iron 2.20 MMBtu natural gas hot water heater located at the Food Stores SN: 413511 | 2006 | FG-BOILERMACT |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-FOODSTORES3 | Lattner firetube 0.26 MMBtu natural gas steam power boiler located at the Food Stores SN: 413512 | 2006 | FG-BOILERMACT |
| EU-FOODSTORES4 | Unknown type 0.26 MMBtu natural gas hot water heater located at the Food Stores SN: xxxxxx | | FG-BOILERMACT |
| EU-GROUNDSNURSURY | Weil McLain cast iron 0.63 MMBtu natural gas hot water heater located at the Grounds Maintenance Nursery SN: R395958 | 2001 | FG-BOILERMACT |
| EU-HORTCLTRRSCH | NAT'L Crane cast iron 0.40 MMBtu natural gas hot water heater located at the Horticulture Teaching and Research Center SN: 209615 | 1966 | FG-BOILERMACT |
| EU-HOUSINGSERVICEOFFICE1 | Kewanee firetube 0.45 MMBtu natural gas hot water heater located at the RHS Information Service Bldg. SN: 345960 | 1986 | FG-BOILERMACT |
| EU-HOUSINGSERVICEOFFICE2 | Smith cast iron 0.50 MMBtu natural gas hot water heater located at the RHS Information Service Bldg. SN: 421246 | 2007 | FG-BOILERMACT |
| EU-MANLYMILES1 | Smith cast iron 2.16 MMBtu natural gas hot water heater located in the Manly Miles Bldg. SN: 388275 | 1998 | FG-BOILERMACT |
| EU-MANLYMILES2 | Smith cast iron 2.16 MMBtu natural gas hot water heater located in the Manly Miles Bldg. SN: 393458 | 2000 | FG-BOILERMACT |
| EU-MANLYMILES3 | 1.027 MMBtu natural gas hot water heater located in the Manly Miles Bldg. SN: M442653 | | FG-BOILERMACT |
| EU-MANLYMILES4 | 1.027 MMBtu natural gas hot water heater located in the Manly Miles Bldg. SN: M442654 | | FG-BOILERMACT |
| EU-NISBET1 | Smith cast iron 3.84 MMBtu natural gas hot water heater located in the Nisbet Bldg. SN: 393441 | 2000 | FG-BOILERMACT |
| EU-NISBET2 | Smith cast iron 3.84 MMBtu natural gas hot water heater located in the Nisbet Bldg. SN: 393459 | 2000 | FG-BOILERMACT |
| EU-PAVILIONAGLIVESTOCK1 | Raypak watertube 3.00 MMBtu natural gas hot water heater located at 3351 Forest Rd, SN: 379417 | 1996 | FG-BOILERMACT |
| EU-PAVILIONAGLIVESTOCK2 | Raypak watertube 3.00 MMBtu natural gas hot water heater located at 3351 Forest Rd, SN: 379418 | 1996 | FG-BOILERMACT |
| EU-PAVILIONAGLIVESTOCK3 | Raypak watertube 3.00 MMBtu natural gas hot water heater located at 3351 Forest Rd, SN: 379419 | 1996 | FG-BOILERMACT |
| EU-PAVILIONAGLIVESTOCK4 | Raypak watertube 3.00 MMBtu natural gas hot water heater located at 3351 Forest Rd, SN: 379420 | 1996 | FG-BOILERMACT |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-PAVILIONAGLIVESTOCK5 | Raypak watertube 3.00 MMBtu natural gas hot water heater located at 3351 Forest Rd, SN: 379421 | 1996 | FG-BOILERMACT |
| EU-PAVILIONAGLIVESTOCK6 | Raypak watertube 3.00 MMBtu natural gas hot water heater located at the 3351 Forest Rd, SN: 379422 | 1996 | FG-BOILERMACT |
| EU-PAVILIONAGLIVESTOCK7 | Lochinvar watertube 1.26 MMBtu natural gas hot water heater located at 3351 Forest Rd, SN: 379423 | 1996 | FG-BOILERMACT |
| EU-POULTRYSERVICEBUILDING | Hydrotherm cast iron 0.24 MMBtu natural gas hot water heater located 3197 W. Jolly Rd, SN: 342910 | 1985 | FG-BOILERMACT |
| EU-PURCHASINGBLDG | Weil McLain cast iron 0.50 MMBtu natural gas hot water heater located at 88 Service Rd, SN: 373522 | 1993 | FG-BOILERMACT |
| EU-RIVERWATERRES | Burnham cast iron 0.50 MMBtu natural gas hot water heater located at 1150 Kalamazoo St, SN: 393463 | 2000 | FG-BOILERMACT |
| EU-SPARTANCHILDDEV1 | Weil McLain cast iron 0.15 MMBtu natural gas hot water heater located in the Spartan Child Development Center, SN: 398690 | 2002 | FG-BOILERMACT |
| EU-SPARTANCHILDDEV2 | Weil McLain cast iron 0.15 MMBtu natural gas hot water heater located in the Spartan Child Development Center, SN: 398691 | 2002 | FG-BOILERMACT |
| EU-SPARTANCHILDDEV3 | Weil McLain cast iron 0.15 MMBtu natural gas hot water heater located in the Spartan Child Development Center, SN: 398692 | 2002 | FG-BOILERMACT |
| EU-SPARTANCHILDDEV4 | Weil McLain cast iron 0.15 MMBtu natural gas hot water heater located in the Spartan Child Development Center, SN: 398693 | 2002 | FG-BOILERMACT |
| EU-SURPLUSRECYCLING1 | Viessman firetube 0.85 MMBtu natural gas hot water heater located at 223 Greenway St, SN: 423333 | 2009 | FG-BOILERMACT |
| EU-SURPLUSRECYCLING2 | Viessman firetube 0.85 MMBtu natural gas hot water heater located at 223 Greenway St, SN: 423333 | 2009 | FG-BOILERMACT |
| EU-SWINETEACHINGRES | Weil McLain cast iron 0.15 MMBtu natural gas hot water heater located at 479 S. College Rd, SN: 385357 | 1997 | FG-BOILERMACT |
| EU-TENNISFACILITY1 | Lochinvar firetube 0.28 MMBtu natural gas hot water heater located at the Tennis Facility, SN: 377312 | 1985 | FG-BOILERMACT |
| EU-TENNISFACILITY2 | Lochinvar firetube 0.28 MMBtu natural gas hot water heater located at the Tennis Facility, SN: 377313 | 1985 | FG-BOILERMACT |
| EU-TREERESSHOPOFFICE | Weil McLain cast iron 0.14 MMBtu natural gas hot water heater located at 472 Jolly Rd, SN: 324068 | 1976 | FG-BOILERMACT |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-UNIVCONTRESCTR1 | Johnston firetube 5.23 MMBtu natural gas low pressure steam boiler located at 4321 N Hagadorn Rd, SN: 372265 | 1993 | FG-BOILERMACT |
| EU-UNIVCONTRESCTR2 | Johnston firetube 2.57 MMBtu natural gas high pressure steam boiler located at 4321 N Hagadorn Rd, SN: 372266 | 1993 | FG-BOILERMACT |
| EU-UNIVCONTRESCTR3 | Johnston firetube 5.23 MMBtu natural gas low pressure steam boiler located at 4321 N Hagadorn Rd, SN: 372267 | 1993 | FG-BOILERMACT |
| EU-VANHOOSENHALL | Viessman Werke firetube 1.73 MMBtu natural gas hot water heater located at 133 Service Rd, SN: 429170 | 2011 | FG-BOILERMACT |
| EU-VETRESGERMFREE | Columbia cast iron 0.45 MMBtu natural gas hot water heater located at 4339 Hagadorn Rd, SN: 384196 | 1997 | FG-BOILERMACT |
| EU-VETMEDMCPHAILEQUINE1 | Smith cast iron 1.22 MMBtu natural gas hot water heater located at 1535 Bogue St, SN: 393442 | 2000 | FG-BOILERMACT |
| EU-VETMEDMCPHAILEQUINE2 | Smith cast iron 1.23 MMBtu natural gas hot water heater located at 1535 Bogue St, SN: 393443 | 2000 | FG-BOILERMACT |
| EU-VETMEDPEGASUS1 | Smith 19A-s/w09 cast iron 1.55 MMBtu natural gas hot water heater located at 4321 N. Hagadorn Rd, SN: 408644 | 2005 | FG-BOILERMACT |
| EU-VETMEDPEGASUS2 | Smith 19A-s/w09 cast iron 1.55 MMBtu natural gas hot water heater located at 4321 N. Hagadorn Rd, SN: 408645 | 2005 | FG-BOILERMACT |
| EU-VETRESBARNA | Columbia cast iron 0.70 MMBtu natural gas hot water heater located at 4445 Hagadorn Rd, SN: 384195 | 1997 | FG-BOILERMACT |
| EU-VETRESBARNJ1 | Burnham firetube 0.20 MMBtu natural gas low pressure steam boiler located at 4339 Hagadorn Rd, SN: 424836 | 2011 | FG-BOILERMACT |
| EU-VETRESBARNJ2 | Weil-McLain cast iron 0.15 MMBtu natural gas hot water heater located at 4339 Hagadorn Rd, SN: 419658 | 2008 | FG-BOILERMACT |
| EU-VETRESBARNJ3 | 1.674 MMBtu natural gas hot water heater SN: 370990 | | FG-BOILERMACT |
| EU-COWLESHOUSE1 | 0.508 MMBtu natural gas hot water heater SN: MIR431820 | | FG-BOILERMACT |
| EU-COWLESHOUSE2 | 0.508 MMBtu natural gas hot water heater SN:MIR431819 | | FG-BOILERMACT |
| EU-LIFESCIENCE1 | 0.53 MMBtu natural gas hot water heater SN: 434677 | | FG-BOILERMACT |
| EU-LIFESCIENCE2 | 0.53 MMBtu natural gas hot water heater SN: 434678 | | FG-BOILERMACT |
| EU-BIBOILER1 | Cleaver Brooks 16.74 MMBtu natural gas / No. 2 fuel oil fired boiler located at Biotechnology Institute. | 1986 | FG-BOILERMACT |
| EU-BIBOILER2 | Cleaver Brooks 16.74 MMBtu natural gas / No. 2 fuel oil fired boiler located at Biotechnology Institute. | 1986 | FG-BOILERMACT |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-BIBOILER3 | Cleaver Brooks 10.46 MMBtu natural gas / No. 2 fuel oil fired boiler located at Biotechnology Institute. | 1986 | FG-BOILERMACT |
| EU-MSUFCU1 | 0.8 MMBtu SN: 439071 | | FG-BOILERMACT |
| EU-MSUFCU2 | 0.8 MMBtu SN: 439071 | | FG-BOILERMACT |
| EU-FUEL&CARWASH | 2.4 MMBtu natural gas hot water heater SN: 434644 | | FG-BOILERMACT |
| EU-DIGESTER | 6 MMbtu fired on digester gas | | FG-BOILERMACT |

# Section 2 - T.B. Simon Power Plant

# 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% opacity, except for one 6-minute average per hour of not more than 27% 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. Semi-annually 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:
    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))**
    a. 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))**
    b. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

c. 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))**

## Re-openings

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 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, EGLE.[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, EGLE, 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.

# 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 |
|---|---|---|---|
| EU-UNIT1 | Dry bottom wall-fired, natural gas boiler capable of generating 250,000 lb/hr of steam. This boiler is used to generate heating steam for the university and for the firing of a steam turbine to produce electricity for the university. This boiler is equipped with overfire air. | 01/01/1965, 11/01/1978, 10/20/2011 | FG-UNIT1/2, FG-BLRMACT-EXISTINGGAS1, |
| EU-UNIT2 | Dry bottom wall-fired, natural gas fired boiler capable of generating 250,000 lb/hr of steam. This boiler is used to generate heating steam for the university and for the firing of a turbine to produce electricity for the university. This boiler is equipped with overfire air. | 01/01/1965, 11/01/1978, 10/20/2011 | FG-UNIT1/2, FG-BLRMACT-EXISTINGGAS1, |
| EU-UNIT3 | Dry bottom wall-fired natural gas fired boiler capable of generating 350,000 lb/hr of steam. The boiler can be used to generate heating steam for the university and for the firing of a steam turbine to produce electricity for the university. This boiler is equipped with overfire air. | 03/15/1973, 01/01/1975, 10/20/2011, 10/31/2014 | FG-BLRMACT-EXISTINGGAS1 |
| EU-UNIT4 | Circulating fluidized bed natural gas boiler capable of generating 350,000 lb/hr of steam. The boiler is used to generate heating steam for the university and for the firing of a steam turbine to produce electricity for the university. | 12/12/1990, 10/20/2011, 1/10/2017 | FG-BLRMACT-EXISTINGGAS1 |
| EU-UNIT5 | Heat recovery steam generator (HRSG) with natural gas-fired duct burner; 80 MMBTU/hr heat input (LHV). | 06/04/2004 | FG-UNITS5/6 |
| EU-UNIT6 | 139 MMBtu/Hr natural gas fired turbine with dry low-NOx burner (considered a lean premix gas-fired turbine) and HRSG (EU-UNIT5) capable of generating 115,000 lbs of steam/hour and 12.0 mW. The heat rate based on lower heating value of the fuel for EU-UNIT6 is 10.6 kJ/Wh. | 06/04/2004 | FG-UNITS5/6 |
| EU-EMGENGINE | Emergency black start 1528 hp, 1020 kW compression ignition reciprocating engine for EU-UNIT6. | 06/04/2004 | NA |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-SPENTSANDEXH4 | Unit 4 spent sand handling mechanical exhauster used to pneumatically transfer spent sand from hoppers to the spent sand silo. The vacuum system pump pulls the spent sand form the hoppers and into the spent sand silo via a cyclone separator. Two separate discharge vent fans are associated. | 12/12/1990, 1/10/2017 | FG-4MATVENTS |
| EU-SPENTSANDSILO4 | Unit 4 spent sand silo vent. This air displacement vent is equipped with a bag filter. This vent discharges air from the spent sand silo during periods when spent sand is being loaded into the silo. | 12/12/1990, 1/10/2017 | FG-4MATVENTS |
| EU-SANDSILO4 | Sand silo vent. This air displacement vent is equipped with a bag filter. This vent discharges air from the sand silo during periods when the silo is being filled. | 12/12/1990 | FG-4MATVENTS |
| EU-DEGTSIMONP1 | Parts washer | 09/01/1990 | FG-2COLDCLEANER |
| EU-DEGTSIMONP2 | Parts washer | 09/01/1990 | FG-2COLDCLEANER |

# EU-UNIT3
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Dry bottom wall-fired natural gas fired boiler capable of generating 350,000 lb/hr of steam. The boiler can be used to generate heating steam and electricity for the university. This boiler is equipped with overfire air. (PTI 75-14B)

**Flexible Group ID:** FG-BLRMACT-EXISTINGGAS1

## POLLUTION CONTROL EQUIPMENT

Low-NOx burners

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. NOx | 0.20 lbs/MMBTU[2] | 3-hr rolling average | EU-UNIT3 | SC VI.1 | **40 CFR 60.44(a)(1)** |

## II. MATERIAL LIMIT(S)

1. The permittee shall only combust pipeline quality natural gas fuel in EU-UNIT3.[1] **(R 336.1225)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall calibrate, maintain, and operate, in a satisfactory manner, devices to monitor and record the NOx and $CO_2$ or $O_2$ emissions and flow from EU-UNIT3, on a continuous basis and according to the procedures outlined in Appendix 3-2.[2] **(40 CFR 60.45, 40 CFR Part 75)**

2. The maximum design heat input capacity for EU-UNIT3, shall not exceed 460 mmBtu per hour, based on the higher heating value (HHV) of the fuel, **(R336.1201(3))**

## V. TESTING/SAMPLING

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

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 continuously monitor and record, in a satisfactory manner, the NOx and $CO_2$ or $O_2$ emissions and flow from EU-UNIT3. The permittee shall operate the Continuous Emission Monitoring System (CEMS) (or Predictive Emissions Monitoring Systems (PEMS)) to meet the timelines, requirements and reporting detailed in Appendix 3 and shall use the CEMS (or PEMS) data for determining compliance with SC I.1. **(40 CFR 60.45, 40 CFR Part 75)**

2. Records of all measurements including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring systems' performance evaluations; all continuous monitoring system or monitoring device calibration checks; and records of adjustments and maintenance performed on these systems or devices. **(R 336.1201(3), R 336.1911, 40 CFR Part 60 Subpart D)**

3. The permittee shall monitor and maintain the following:
   a. Amount of natural gas fired in EU-EUNIT3 **on a monthly basis**.
   b. Calendar month.

   The permittee shall keep the above records on file at the facility, in a satisfactory manner, and available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1702, R 336.1901)**

**See Appendix 3-2**

## VII. REPORTING

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

2. Semi-annual 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. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information[2]: **(R 336.2170, 40 CFR 60.7,)**
   a. A report of each exceedance above the limits specified in the conditions of EU-UNIT3. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
   b. A report of all periods of CEMS (or PEMS)/CERMS downtime and corrective action.
   c. A report of the total operating time of EU-UNIT3 during the reporting period.
   d. A report of any periods that the CEMS (or PEMS)/CERMS exceeds the instrument range.
   e. If no exceedances or CEMS (or PEMS)/CERMS downtime occurred during the reporting period, the permittee shall report that fact.

**See Appendix 8-2**

## 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. SVUNIT3/4 | 156 | 275 | **R 336.1225** |

## IX. OTHER REQUIREMENT(S)

1. The permittee shall meet the monitoring, recordkeeping, and reporting requirements of the NOx SIP Call during the ozone season (May 1 through September 30). (**40 CFR Part 96, Subpart H)**

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart DDDDD, for National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters by the initial compliance date. **(40 CFR 63.7495, 40 CFR Part 63, Subparts A and DDDDD)**

3. The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart D. **(40 CFR 60.40).**

4. The permittee shall comply with all applicable requirements of 40 CFR Part 75. **(40 CFR Part 75).**

5. The permittee shall provide written notification to the Air Quality Division not more than 30 days after the completion of the project and commencement of trial operation. **(R 336.1201(7)(a))**

**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).

# EU-UNIT4
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Circulating fluidized bed natural gas boiler capable of generating 350,000 lb/hr of steam. The boiler is used to generate steam for the university and for the firing of a steam turbine to produce electricity for the university. (PTI 75-14C)

**Flexible Group ID:** FG-BLRMACT-EXISTINGGAS1

## POLLUTION CONTROL EQUIPMENT

- Baghouse collector for particulate control
- Selective non-catalytic reduction (SNCR) system for nitrogen oxide control (may be used)

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. $NO_x$ | 0.076 lbs/MM BTU heat input | 24-hr rolling average | EU-UNIT4 | SC VI.6 | **40 CFR 52.21(j), R 336.2810** |
| 2. $NO_x$ | 32.2 lbs/hr | 24-hr rolling average | EU-UNIT4 | SC VI.6 | **40 CFR 52.21(j), R 336.2810** |

## II. MATERIAL LIMIT(S)

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

1. The permittee shall only combust pipeline quality natural gas fuel in EU-UNIT4. **(R 336.1213(2))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU-UNIT4 unless a Malfunction Abatement Plan for EU-UNIT4 and its associated control equipment has been implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1911)**

2. The permittee shall calibrate, maintain, and operate continuous emission monitoring systems (CEMS) (or Predictive Emissions Monitoring Systems (PEMS)) to monitor and record the NOx, $CO_2$ or $O_2$ emissions for EU-UNIT4, on a continuous basis and according to the procedures outlined:
**(R 336.1201(3), R 336.2152(2), 40 CFR 60.13(d), 40 CFR Part 75)**
   a. The CEMS (or PEMS) shall complete a minimum of 1 cycle of operation for each successive 15-minute period.
   b. The permittee shall check the zero and span calibration drifts for all CEM (or PEM) systems, at least once daily, and make the appropriate adjustments in accordance with the manufacturer's written procedure.[2]

## IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

## V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3), R 336.1213(3)(b)(ii))**

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 continuously monitor and record, in a satisfactory manner, the NOx, $CO_2$ or $O_2$ emissions from EU-UNIT4. The permittee shall operate each Continuous Emission Monitoring System (or Predictive Emissions Monitoring Systems)/Continuous Emission Rate Monitoring System (CEMS (or PEMS)/CERMS) to meet the timelines, requirements and reporting detailed in Appendix 3-2 and shall use the CEMS (or PEMS)/CERMS data for determining compliance with SC I.1 & SC I.2 . Where the following data is required:[2]
**(R 336.2810, R 336.1213(3), 40 CFR 52.21(j), 40 CFR Part 75)**
   a. The 24-hour rolling average NOx emission rates in terms of pounds per million BTU heat input and pounds per hour.

2. The permittee shall keep the following information on a monthly basis for EU-UNIT4:
   a. A record of the hours of operation. The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.[2] **(R 336.2810, 40 CFR 52.21(j))**

3. The permittee shall calibrate, maintain, and operate a continuous emission monitoring system (CEMS) or Predictive Emissions Monitoring Systems (PEMS) to monitor and record the NOx, $CO_2$ or $O_2$ emissions from EU-UNIT4 on a continuous basis and according to the procedures outlined below and in Appendix 3-2:[2]
**(R 336.1201(3))**
   a. The CEMS (or PEMS) shall complete a minimum of 1 cycle of operation for each successive 15-minute period.[2] **(R 336.2152(2))**
   b. The permittee shall check the zero and span calibration drifts for all CEM (or PEM) systems, at least once daily, and make the appropriate adjustments in accordance with the manufacturer's written procedure.[2] **(40 CFR 60.13(d), 40 CFR 75)**

4. The permittee shall keep records of all measurements including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring systems performance evaluations; all continuous monitoring system or monitoring device calibration checks; and records of adjustments and maintenance performed on these systems or devices.[2] **(R 336.1201(3))**

5. The Permittee shall monitor and maintain daily records on the following:
   b. Amount of natural gas fired in EU-UNIT4.
   c. Calendar date.

   The permittee shall keep the above records on file at the facility, in a satisfactory manner, and available to the Department upon request.[2] **(R 336.1224, R 336.1702)**

6. The permittee shall keep records of the occurrence and duration of any startup, shutdown, or malfunction in the operation; any malfunction of the air pollution control equipment, or any periods during which a continuous monitoring system or monitoring device is inoperative.[2] **(40 CFR 60.7)**

**See Appendix 3-2**

## VII. REPORTING

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

2. Semi-annual 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. Quarterly reporting of the "Excess Emission and Monitoring Systems Performance Report" and the "Summary Report" as specified in 40 CFR 60.7 (c) and (d) for NOx, (excess emissions shall be based on the limits identified in Section I). Due April 30 for reporting period January 1 to March 31, July 30 for reporting period April 1 to June 30, October 30 for reporting period July 1 to September 30, and January 30 for reporting period October 1 to December 31.[2] **(R 336.2170, 40 CFR 60.7)**

5. Quarterly reporting of the “Data Assessment Report” (ie. Linearity or CGA) as set forth in Appendix F of 40 CFR 60 for the CEMS (or PEMS). Due April 30 for reporting period January 1 to March 31, July 30 for reporting period April 1 to June 30, October 30 for reporting period July 1 to September 30, and January 30 for reporting period October 1 to December 31.[2] **(40 CFR 60.7)**

8. The permittee shall notify the AQD of any physical or operational change which may increase the emission rate of any pollutant to which a standard applies, unless that change is specifically exempted. This notice shall be postmarked 60 days, or as soon as practical, before the change is commenced and shall include information on describing the precise nature of the change, present and proposed emission control systems, productive capacity before and after the change, and the expected completion date of the change. **(40 CFR 60.7)**

9. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. The permittee shall notify the District Supervisor or the Technical Programs Unit no less than 7 days prior to the anticipated test date. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1331, R 336.2001, R 336.2003, R 336.2004, R 336.2810, 40 CFR 52.21(j))**

10. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS/PEMS set forth in 40 CFR Part 75, Subpart C. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD.[2] **(40 CFR 75.21)**

**See Appendix 8-2**

## 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. SVUNIT3/4 | 156[1] | 275[1] | **R 336.1225** |

## IX. OTHER REQUIREMENT(S)

1. The permittee shall meet the monitoring, recordkeeping, and reporting requirements of the NOx SIP Call during the ozone season (May 1 through September 30). **(40 CFR Part 96, Subpart H)**

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart DDDDD, for National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters by the extend compliance date of January 31, 2017. **(40 CFR 63.7495, 40 CFR Part 63, Subparts A and DDDDD)**

3. The permittee shall comply with all applicable requirements of 40 CFR, Part 60 Subpart Db. **(40 CFR 60.40b).**

4. The permittee shall comply with all applicable requirements of 40 CFR, Part 75. **(40 CFR Part 75).**

**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).

# EU-UNIT5
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Heat recovery steam generator (HRSG) with natural gas fired duct burner capable of 80 MMBTU/hr heat input for EU-UNIT6. (PTI 13-04)

**Flexible Group ID:** FG-UNITS5/6

## 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)

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))**

NA

## VI. MONITORING/RECORDKEEPING

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

The permittee shall record and maintain records of the amount of fuel combusted in EU-UNIT5 during each calendar month. All records shall be kept on file for a period of at least five years and made available to the Department upon request.[2] **(40 CFR 60.48c (g)(2))**

## VII. REPORTING

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

2. Semi-annual 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 8-2**

## 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 New Source Performance Standards for Small Industrial –Commercial-Institutional Steam Generating Units as specified in 40 CFR Part 60, Subpart Dc. **(40 CFR Part 60, Subpart Dc)**

**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).

# EU-UNIT6
# EMISSION UNIT CONDITIONS

## DESCRIPTION

139 MMBtu/Hr natural gas fired turbine with dry low-NOx burner (considered a lean premix gas-fired turbine) and HRSG (EU-UNIT5) capable of generating 115,000 lbs of steam/hour and 12.0 MW. The heat rate based on lower heating value of the fuel for EU-UNIT6 is 10.6 kJ/Wh. (PTI 13-04)

**Flexible Group ID:** FG-UNITS5/6

## POLLUTION CONTROL EQUIPMENT

Low NOx Burner

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. NOx | 204 ppm @ 15% O2 dry | Test Protocol | EU-UNIT6 | 40 CFR 60.335 | **40 CFR 60.332(a)** |

## II. MATERIAL LIMIT(S)

1. The permittee shall only fire natural gas containing 20.0 grains or less of total sulfur per 100 standard cubic feet.[2] **(40 CFR 60.331)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain EU-UNIT6 with a dry low-NOx combustor.[2] **(R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the NOx emissions for EU-UNIT6 on a continuous basis.[2] **(R 336.1205 (1)(a) and (3))**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the CO emissions for EU-UNIT6 on a continuous basis[2] **(R 336.1205 (1)(a) and (3))**

## V. TESTING/SAMPLING

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

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 monitor the fuel sulfur content via a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less.[2] **(40 CFR 60.334(h)(3)(i))**

2. The permittee shall keep, in a satisfactory manner, monthly NOx records for EU-UNIT6. All records shall be kept on file for a period of at least five years and made available to the Department upon request.[2] **(R 336.1205 (1)(a) and (3), 40 CFR 60.332 (a)(2))**

3. The permittee shall keep, in a satisfactory manner, monthly CO records for EU-UNIT6. All records shall be kept on file for a period of at least five years and made available to the Department upon request.[2] **(R 336.1205 (1)(a) and (3))**

## VII. REPORTING

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

2. Semi-annual 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. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD. This documentation can be submitted as a combined package for FG-UNITS-5/6.[2] **(40 CFR Part 60, Appendix F)**

5. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:[2] **(R 336.2170, 40 CFR 60.7)**
   a. A report of each exceedance above the limits specified in the conditions of FG-UNIT5/6. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
   b. A report of all periods of CEMS (or PEMS)/CERMS downtime and corrective action.
   c. A report of the total operating time of FG-UNIT5/6 during the reporting period.
   d. A report of any periods that the CEMS (or PEMS)/CERMS exceeds the instrument range.
   e. If no exceedances or CEMS (or PEMS)/CERMS downtime occurred during the reporting period, the permittee shall report that fact.

   This documentation can be submitted as a combined package for FG-UNITS-5/6

**See Appendix 8-2**

## 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 provisions of the National Emission Standards for Hazardous Air Pollutants from Stationary Combustion Turbines as specified in 40 CFR Part 63, Subparts A and YYYY, as they apply to EU-UNIT6.[2] **(40 CFR Part 63, Subparts A & YYYY, 40 CFR 63.6095(d))**

2. The permittee shall comply with all applicable provisions of the New Source Performance Standards for Stationary Gas Turbines as specified in 40 CFR Part 60, Subpart GG, as applicable to EU-UNIT6.[2] **(40 CFR Part 60, Subpart GG)**

**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).

# EU-EMGENGINE
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Kohler compression ignition 1528 horsepower, 1020kW, black start existing reciprocating internal combustion engine, for EU-UNIT6.

**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 EU-EMGENGINE unlimited hours for emergency use. The permittee may also operate EU-EMGENGINE for no more than 100 hours per calendar year for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. EU-EMGENGINE may operate up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply non-emergency power as part of a financial arrangement with another entity. **(40 CFR 63.6640(f))**

## 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))**

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, in a satisfactory manner, a written log of the monthly hours of operation and type of operation for EU-EMGENGINE. All records shall be kept on file for a period of at least five years and made available to the Department upon request.[2] **( R336.1205 (1)(a) and (3))**

**See Appendix 2-4**

## VII. REPORTING

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

2. Semi-annual 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 8-2**

## 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 the applicable requirements of 40 CFR Part 63 (“National Emission Standard for Hazardous Air Pollutants for Source Categories”), Subparts A (”General Provisions’) and ZZZZ (“National Emission Standard for Hazardous Air Pollutants 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 |
|---|---|---|
| FG-UNIT1/2 | Two dry bottom wall-fired natural gas fired boilers capable of generating 250,000 lb/hr of steam. The boilers are used to generate heating steam for the university and for the firing of a steam turbine to produce electricity for the university. The boilers are equipped with overfire air and are also equipped with SNCR which may be used primarily during the ozone season to reduce NOx levels. | EU-UNIT1<br>EU-UNIT2 |
| FG-UNITS5/6 | Natural gas fired 139 MMBtu/Hr heat input turbine with dry low-NOx burner and heat recovery steam generator (HRSG) and a natural gas fired duct burner capable of 80 MMBTU/hr heat input. | EU-UNIT5<br>EU-UNIT6 |
| FG-2COLDCLEANER | All cold cleaners at the powerhouse. | EU-DEGTSIMONP1<br>EU-DEGTSIMONP2 |
| FG-4MATVENTS | Material handling equipment associated with Unit 4 boiler. | EU-SPENTSANDEXH4<br>EU-SPENTSAND<br>EU-SANDSILO4 |
| FG-BLRMACT-EXISTINGGAS1 | Gas 1 Fuel Subcategory requirements for existing Boilers at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD. | EU-UNIT1<br>EU-UNIT2<br>EU-UNIT3<br>EU-UNIT4 |

# FG-UNIT1/2
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Two dry bottom wall-fired natural gas fired boilers each capable of generating 250,000 lb/hr of steam. The boilers are used to generate steam for the university and for the firing of a steam turbine to produce electricity (CHP). The boilers are equipped with overfire air. (PTI 75-14A)

**Emission Units:** EU-UNIT1, EU-UNIT2

## POLLUTION CONTROL EQUIPMENT

Low-$NO_x$ burners

## 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)

1. The permittee shall only combust pipeline quality natural gas fuel in EU-UNIT1 and EU-UNIT2. **(R 336.1213(2))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate either EU-UNIT1 or EU-UNIT2 unless a Malfunction Abatement Plan for EU-UNIT1 and EU-UNIT2, and their associated control equipment, has been implemented and is maintained for both units. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.[2] **(R 336.1911)**.

## 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))**

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 monitor and maintain monthly records on the following:
   a. Amount of natural gas fired in EU-UNIT1 and EU-UNIT2.
   b.. Calendar month.

   The permittee shall keep the above records on file at the facility, in a satisfactory manner, and available to the Department upon request.[2] **(R 336.1205, R 336.1224, R 336.1702, R 336.1901)**

## VII. REPORTING

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

2. Semi-annual 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))**

## 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. SVUNIT1/2 | 132[2] | 275[2] | **R 336.1201(3), R 336.1225** |

## IX. OTHER REQUIREMENT(S)

1. The permittee shall meet the monitoring, recordkeeping, and reporting requirements of the NOx SIP Call during the ozone season (May 1 through September 30). **(40 CFR Part 96, Subpart H)**

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart DDDDD, for National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters by the initial compliance date. **(40 CFR 63.7495, 40 CFR Part 63, Subparts A and DDDDD)**

**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).

# FG-UNITS5/6
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

139 MMBtu/Hr heat input natural gas fired turbine with dry low-NOx burner, heat recovery steam generator (HRSG) and a natural gas fired duct burner rated at 80 MMBTU/hr. heat input. (PTI 13-04)

**Emission Units:** EU-UNIT5, EU-UNIT6

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. NOx | 34.9 tpy[2] | 12-month rolling time period as determined by the end of each calendar month | FG-UNITS5/6 | SC VI.2 | **R 336.1205 (1)(a) and (3),** |
| 2. CO | 89.9 tpy[2] | 12-month rolling time period as determined by the end of each calendar month | FG-UNITS5/6 | SC VI.3 | **R 336.1205 (1)(a) and (3)** |

## II. MATERIAL LIMIT(S)

1. The permittee shall only fire natural gas containing 20.0 grains or less of total sulfur per 100 standard cubic feet.[2] **(40 CFR 60.331)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain FG-UNITS5/6 with a dry low-NOx combustor.[2] **(R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the NOx emissions for FG-UNITS5/6 on a continuous basis.[2] **(R 336.1205 (1)(a) and (3))**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the CO emissions for FG-UNITS5/6 on a continuous basis.[2] **(R 336.1205 (1)(a) and (3))**

## V. TESTING/SAMPLING

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

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, in a satisfactory manner, monthly and previous 12 month NOx records for FG-UNITS5/6. All records shall be kept on file for a period of at least five years and made available to the Department upon request.[2] **(R 336.1205 (1)(a) and (3))**

2. The permittee shall keep, in a satisfactory manner, monthly and previous 12 month CO records for FG-UNITS5/6. All records shall be kept on file for a period of at least five years and made available to the Department upon request.[2] **(R 336.1205 (1)(a) and (3))**

**See Appendix 3-2**

## VII. REPORTING

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

2. Semi-annual 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. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD.[2] (**40 CFR Part 60, Appendix F)**

5. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:[2] **(R 336.2170, 40 CFR 60.7,)**
   a. A report of each exceedance above the limits specified in the conditions of FG-UNIT5/6. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
   b. A report of all periods of CEMS (or PEMS)/CERMS downtime and corrective action.
   c. A report of the total operating time of FG-UNIT5/6 during the reporting period.
   d. A report of any periods that the CEMS (or PEMS)/CERMS exceeds the instrument range.
   e. If no exceedances or CEMS (or PEMS)/CERMS downtime occurred during the reporting period, the permittee shall report that fact.

**See Appendix 8-2**

## 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. SV-2-TURB/DB1 | 72[2] | 157.5[2] | **R 336.1225, 40 CFR 52.21 (c) & (d)** |

## 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).

# FG-2COLDCLEANER
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

**Emission Units:** EU-DEGTSIMONP1, EU-DEGTSIMONP2

## 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)

1. The permittee shall not use cleaning solvents containing more than 5 percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**

2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
   a. The air/vapor interface of the cold cleaner is no more than 10 square feet. **(R 336.1281(h))**
   b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**

2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**

3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**

4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**

5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees Fahrenheit, then the cold cleaner must comply with at least one of the following provisions:
   a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**
   b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**
   c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

## V. TESTING/SAMPLING

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

NA

## VI. MONITORING/RECORDKEEPING

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

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**

2. The permittee shall maintain the following information on file for each cold cleaner: **(R 336.1213(3))**
   a. A serial number, model number, or other unique identifier for each cold cleaner.
   b. The date the unit was installed, manufactured or that it commenced operation.
   c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
   d. The applicable Rule 201 exemption.
   e. The Reid vapor pressure of each solvent used.
   f. If applicable, the option chosen to comply with Rule 707(2).

3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**

4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20%, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

## VII. REPORTING

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

2. Semi-annual 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 8-2**

## 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).

# FG-4MATVENTS
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Material handling equipment associated with Unit 4 boiler.

**Emission Units:** EU-SPENTSANDEXH4, EU-SPENTSANDSILO4, EU-SANDSILO4

## POLLUTION CONTROL EQUIPMENT

Cyclone on EU-SPENTSANDSILO4
Bag filter on EU-SPENTSANDSILO4
Bag filter on EU-SANDSILO4

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Opacity | 5%[2] | 6-minute average | FG-4MATVANTS | SC V.1 | **R336,1301(1)(c)** |
| 2. Particulate Matter | 0.02 gr/dscf[2] | NA | FG-4MATVANTS | SC VI.1, VI.2 | **R336.1331(1)(c)** |

## 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 measure the opacity using Method 9 (Visual Determination of the Opacity of Emissions from Stationary Sources) upon request of the AQD. **(R 336.1213(3))**

## 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 perform, at a minimum, a semiannual maintenance check and repairs on each baghouse filter. A record of repairs and maintenance performed on the baghouse filters shall be maintained. **(R 336.1213(3))**

2. Visual inspection for abnormal/excessive dust to be performed at least once a week on all exhausts points. A record shall be made of all checks. Abnormal conditions shall trigger initiation of abatement/repair actions. **(R 336.1213(3))**

## VII. REPORTING

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

2. Semi-annual 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 8-2**

## 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. SVSPENTSANDEXH4A | NA | NA | NA |
| 2. SVSPENTSANDEXH4B | NA | NA | NA |
| 3. SVSPENTSANDSILO4 | NA | NA | NA |
| 4. SVSANDSILO | NA | NA | NA |

## IX. OTHER REQUIREMENT(S)

**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).

# FG-BLRMACT-EXISTINGGAS1
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Gas 1 Fuel Subcategory requirements for existing Boilers at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD.

**Emission Units:** EU-UNIT1, EU-UNIT2, EU-UNIT3, EU-UNIT4

## 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)

1. The permittee shall only burn fuels as allowed in the Unit designed to burn gas 1 subcategory definition in 40 CFR 63.7575. **(40 CFR 63.7499(l))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must meet the requirements in paragraphs (a)(1) and (3) of 40 CFR 63.7500, as listed below, except as provided in paragraphs (b) and (e) of 40 CFR 63.7500, stated in SC III.2 and SC III.3. The permittee must meet these requirements at all times the affected unit is operating, except as provided in paragraph (f) of 40 CFR 63.7500, stated in SC III.4. **(40 CFR 63.7500(a))**
   a. The permittee must meet each work practice standard in Table 3 of 40 CFR Part 63, Subpart DDDDD that applies to the boiler, for each boiler at the source. **(40 CFR 63.7500(a)(1))**
   b. At all times, the permittee must operate and maintain any affected source (EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that 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 source. **(40 CFR 63.7500(a)(3))**

2. As provided in 40 CFR 63.6(g), EPA may approve use of an alternative to the work practice standards. **(40 CFR 63.7500(b))**

3. Boilers in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 of 40 CFR Part 63, Subpart DDDDD, or the operating limits in Table 4 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7500(e))**

4. The above standards apply at all times the affected unit is operating, except during periods of startup and shutdown during which time the permittee must comply only with Table 3 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7500(f))**
5. The permittee must complete an initial tune-up by following the procedures described in 40 CFR 63.7540(a)(10)(i) through (vi), stated in SC IX.5, no later than the compliance date specified in 40 CFR 63.7495 unless an extension

applies, stated in SC IX.2. The permittee must complete the one-time energy assessment specified in Table 3 of 40 CFR Part 63, Subpart DDDDD no later than the compliance date specified in 40 CFR 63.7495 unless an extension applies, stated in SC IX.2. **(40 CFR 63.6(i)(4)(i)(A), 40 CFR 63.7510(e))**

6. The permittee must conduct an annual performance tune-up according to 40 CFR 63.7540(a)(10), stated in SC IX.5.a; or 5-year performance tune-up according to 40 CFR 63.7540(a)(12), stated in SC IX.14.b. Each annual tune-up specified in 40 CFR 63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each 5-year tune-up specified in 40 CFR 63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. **(40 CFR 63.7515(d))**

7. For startup and shutdown, the permittee must meet the work practice standards according to item 5 of Table 3 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7540(d))**

## 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))**

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 must keep records according to paragraphs (a)(1) and (2) of 40 CFR 63.7555, as listed below. **(40 CFR 63.7555(a))**
   a. A copy of each notification and report that the permittee submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that the permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). **(40 CFR 63.7555(a)(1))**
   b. Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii). **(40 CFR 63.7555(a)(2))**

2. The permittee must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown. **(40 CFR 63.7555(i))**

3. The permittee must maintain records of the amount(s) of natural gas used during each startup and shutdown. **(40 CFR 63.7555(j))**

4. The permittee's records must be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). **(40 CFR 63.7560(a))**

5. As specified in 40 CFR 63.10(b)(1), the permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. **(40 CFR 63.7560(b))**

6. The permittee must keep each record on site, or they must be accessible from on-site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The permittee can keep the records off site for the remaining 3 years. **(40 CFR 63.7560(c))**

## VII. REPORTING

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

2. Semi-annual 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 must meet the notification requirements in 40 CFR 63.7545 according to the schedule in 40 CFR 63.7545, both stated in SC VII.7 through SC VII.10, and in Subpart A of 40 CFR 63. **(40 CFR 63.7495(d))**

5 The permittee must include with the Notification of Compliance Status a signed certification that the energy assessment was completed according to Table 3 of 40 CFR Part 63, Subpart DDDDD and is an accurate depiction of the facility at the time of the assessment. **(40 CFR 63.7530(e))**

6 The permittee must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in 40 CFR 63.7545(e), stated in SC VII.8. **(40 CFR 63.7530(f))**

7 The permittee must submit to the Administrator all of the notifications in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), (f)(4) and (6), and 40 CFR 63.9(b) through (h) that apply to the permittee by the dates specified. **(40 CFR 63.7545(a))**

8. Since the permittee is not required to conduct an initial compliance demonstration as specified in 40 CFR 63.7530(a), the Notification of Compliance Status must only contain the information specified in paragraphs (e)(1) and (8). **(40 CFR 63.7545(e))**
   a. A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with 40 CFR Part 63, Subpart DDDDD, and description of the fuel(s) burned. **(40 CFR 63.7545(e)(1))**
   b. In addition to the information required in 40 CFR 63.9(h)(2), your notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official: **(40 CFR 63.7545(e)(8))**
      i. "This facility complies with the required initial tune-up according to the procedures in 40 CFR 63.7540(a)(10)(i) through (vi)." **(40 CFR 63.7545(e)(8)(i))**
      ii. "This facility has had an energy assessment performed according to 40 CFR 63.7530(e)." **(40 CFR 63.7545(e)(8)(ii))**

9. During a period of natural gas curtailment or supply interruption, as defined in 40 CFR 63.7575, if the permittee intends to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of 40 CFR Part 63, Part 60, Part 61, or Part 65, or other gas 1 fuel to fire any affected unit, the permittee must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in 40 CFR 63.7575. The notification must include the information specified in paragraphs (f)(1) through (5) of 40 CFR 63.7545, as listed below. **(40 CFR 63.7545(f))**
   a. Company name and address. **(40 CFR 63.7545(f)(1))**
   b. Identification of the affected unit. **(40 CFR 63.7545(f)(2))**
   c. Reason the permittee is unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began. **(40 CFR 63.7545(f)(3))**
   d. Type of alternative fuel that the permittee intends to use. **(40 CFR 63.7545(f)(4))**
   e. Dates when the alternative fuel use is expected to begin and end. **(40 CFR 63.7545(f)(5))**

10. If the permittee has switched fuels or made a physical change to any boiler and the fuel switch or physical change resulted in the applicability of a different subcategory, the permittee must provide notice of the date upon which the permittee switched fuels or made the physical change within 30 days of the switch/change. The notification must identify: **(40 CFR 63.7545(h))**
    a. The name of the owner or operator of the affected source, EU-UNIT1, EU-UNIT2, EU-UNIT3, and EU-UNIT4, the location of the source, the boiler(s) that have switched fuels, were physically changed, and the date of the notice. **(40 CFR 63.7545(h)(1))**
    b. The currently applicable subcategory under 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7545(h)(2))**
    c. The date upon which the fuel switch or physical change occurred. **(40 CFR 63.7545(h)(3))**

11. The permittee must submit each report in Table 9 of 40 CFR Part 63, Subpart DDDDD that applies. **(40 CFR 63.7550(a))**

12. Unless the EPA Administrator has approved a different schedule for submission of reports under 40 CFR 63.10(a), the permittee must submit each report, according to paragraph (h)(3) of 40 CFR 63.7550, stated in SC VII.14, by the date in Table 9 of 40 CFR Part 63, Subpart DDDDD and according to the requirements in paragraphs (b)(1) through (4) of 40 CFR 63.7550, as listed below. For units that are subject only to a requirement to conduct an annual tune-up according to 40 CFR 63.7540(a)(10), stated in SC IX.5.a, or 5-year tune-up according to 40 CFR 63.7540(a)(12), stated in SC IX.5.b, and not subject to emission limits or operating limits, the permittee may submit only an annual or 5-year compliance report, as applicable, as specified in paragraphs (b)(1) through (4) of 40 CFR 63.7550, as listed below, instead of a semi-annual compliance report. **(40 CFR 63.7550(b))**
    a. The first compliance report must cover the period beginning on the compliance date that is specified for each boiler stated in SC IX.2, and ending on January 31, 2018 (or whichever date is the first date that occurs at least 5 years after January 31, 2017, stated in SC IX.2 if submitting a 5-year compliance report). **(40 CFR 63.6(i)(4)(i)(A), 40 CFR 63.7550(b)(1))**
    b. The first annual or 5-year compliance report must be postmarked or submitted no later than January 31. **(40 CFR 63.7550(b)(2), (40 CFR 63.10(a)(5))**
    c. Each subsequent annual and 5-year compliance reports must cover the applicable 1 or 5-year periods from January 1 to December 31. **(40 CFR 63.7550(b)(3))**
    d. Each subsequent annual and 5-year compliance reports must be postmarked or submitted no later than March 15. **(40 CFR 63.7550(b)(4), (40 CFR 63.10(a)(5))**

13. A compliance report must contain the following information depending on how the permittee chooses to comply with the limits set in this rule. **(40 CFR 63.7550(c))**
    a. If the facility is subject to a the requirements of a tune up they must submit a compliance report with the information in paragraphs (c)(5)(i) through (iv) and (xiv) of 40 CFR 63.7550. **(40 CFR 63.7550(c)(1))**
    b. 40 CFR 63.7550(c)(5) is as follows:
        i. Company and Facility name and address. **(40 CFR 63.7550(c)(5)(i))**
        ii. Process unit information, emissions limitations, and operating parameter limitations. **(40 CFR 63.7550(c)(5)(ii))**
        iii. Date of report and beginning and ending dates of the reporting period. **(40 CFR 63.7550(c)(5)(iii))**
        iv. The total operating time during the reporting period. **(40 CFR 63.7550(c)(5)(iv))**
        v. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual tune-up according to 40 CFR 63.7540(a)(10), stated in SC IX.5.a, or 5-year tune-up according to 40 CFR 63.7540(a)(12), stated in SC IX.5.b. Include the date of the most recent burner inspection if it was not done annually or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown. **(40 CFR 63.7550(c)(5)(xiv))**

14. The permittee must submit all reports required by Table 9 of 40 CFR Part 63, Subpart DDDDD electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to 40 CFR Part 63, Subpart DDDDD is not available in CEDRI at the time that the report is due the report the permittee must submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. At the discretion of the Administrator, the permittee must also submit these reports, to the Administrator in the format specified by the Administrator. **(40 CFR 63.7550(h)(3))**

**See Appendix 8-2**

## 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. A boiler is existing if it is not new or reconstructed, as defined below. **(40 CFR 63.7490(d))**
   a. A boiler is new if the permittee commences construction of the boiler after June 4, 2010, and the permittee meets the applicability criteria at the time the permittee commences construction. **(40 CFR 63.7490(b))**
   b. A boiler is reconstructed if the permittee meets the reconstruction criteria as defined in 40 CFR 63.2, the permittee commences reconstruction after June 4, 2010, and the permittee meets the applicability criteria at the time the permittee commence reconstruction. **(40 CFR 63.7490(c))**

2. If the permittee has an existing boiler, the permittee must comply with 40 CFR Part 63, Subpart DDDDD no later than January 31, 2016 for EU-UNIT1, EU-UNIT2, and EU-UNIT3 and no later than January 31, 2017 for EU-UNIT4. **(40 CFR 63.6(i)(4)(i)(A), 40 CFR 63.7495(b))**

3. The permittee must be in compliance with the work practice standards of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7505(a))**

4. For affected sources that have not operated since the previous compliance demonstration and more than one year has passed since the previous compliance demonstration, the permittee must complete a subsequent tune-up by following the procedures described in 40 CFR 63.7540(a)(10)(i) through (vi), stated in SC IX.5.a, and the schedule described in 40 CFR 63.7540(a)(13), stated in SC IX.5.c, for units that are not operating at the time of their scheduled tune-up. **(40 CFR 63.7515(g))**

5. The permittee must demonstrate continuous compliance with the work practice standards in Table 3 of 40 CFR Part 63, Subpart DDDDD that applies according to the methods specified in paragraphs (a)(10) through (13) of 40 CFR 63.7540, as listed below. **(40 CFR 63.7540(a))**
   a. For the affected units, the permittee must conduct an annual tune-up of the boiler to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of 40 CFR 63.7540, as listed below. This frequency does not apply to units with continuous oxygen trim systems that maintain an optimum air to fuel ratio. **(40 CFR 63.7540(a)(10))**
      i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment. **(40 CFR 63.7540(a)(10)(i))**
      ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. **(40 CFR 63.7540(a)(10)(ii))**
      iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown). **(40 CFR 63.7540(a)(10)(iii))**
      iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any $NO_x$ requirement to which the unit is subject. **(40 CFR 63.7540(a)(10)(iv))**
      v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or

wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. **(40 CFR 63.7540(a)(10)(v))**

vi. Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs (a)(10)(vi)(A) through (C) of 40 CFR 63.7540, as listed below. **(40 CFR 63.7540(a)(10)(vi))**

A. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler. **(40 CFR 63.7540(a)(10)(vi)(A))**

B. A description of any corrective actions taken as a part of the tune-up. **(40 CFR 63.7540(a)(10)(vi)(B))**

C. The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. **(40 CFR 63.7540(a)(10)(vi)(C))**

b. If a boiler has a continuous oxygen trim system that maintains an optimum air to fuel ratio, the permittee must conduct a tune-up of the boiler every 5 years as specified in paragraphs (a)(10)(i) through (vi) of 40 CFR 63.7540 to demonstrate continuous compliance. The permittee may delay the burner inspection specified in paragraph (a)(10)(i) of 40 CFR 63.7540 until the next scheduled or unscheduled unit shutdown, but the permittee must inspect each burner at least once every 72 months. **(40 CFR 63.7540(a)(12))**

c. If a boiler is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. **(40 CFR 63.7540(a)(13))**

6. Table 10 of 40 CFR Part 63, Subpart DDDDD shows which parts of the General Provisions in 40 CFR 63.1 through 63.15 applies to the permittee. **(40 CFR 63.7565)**

**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 1-2. Abbreviations and Acronyms

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

| Common Acronyms | | Pollutant / Measurement Abbreviations | |
|---|---|---|---|
| AQD | Air Quality Division | acfm | Actual cubic feet per minute |
| BACT | Best Available Control Technology | BTU | British Thermal Unit |
| CAA | Clean Air Act | °C | Degrees Celsius |
| CAM | Compliance Assurance Monitoring | CO | Carbon Monoxide |
| CEM | Continuous Emission Monitoring | $CO_2e$ | Carbon Dioxide Equivalent |
| CFR | Code of Federal Regulations | dscf | Dry standard cubic foot |
| COM | Continuous Opacity Monitoring | dscm | Dry standard cubic meter |
| Department/ department | Michigan Department of Environmental Quality | °F | Degrees Fahrenheit |
| | | gr | Grains |
| EU | Emission Unit | HAP | Hazardous Air Pollutant |
| FG | Flexible Group | Hg | Mercury |
| GACS | Gallons of Applied Coating Solids | hr | Hour |
| GC | General Condition | HP | Horsepower |
| GHGs | Greenhouse Gases | $H_2S$ | Hydrogen Sulfide |
| HVLP | High Volume Low Pressure* | kW | Kilowatt |
| ID | Identification | lb | Pound |
| IRSL | Initial Risk Screening Level | m | Meter |
| ITSL | Initial Threshold Screening Level | mg | Milligram |
| LAER | Lowest Achievable Emission Rate | mm | Millimeter |
| MACT | Maximum Achievable Control Technology | MM | Million |
| MAERS | Michigan Air Emissions Reporting System | MW | Megawatts |
| MAP | Malfunction Abatement Plan | NMOC | Non-methane Organic Compounds |
| EGLE | Michigan Department of Environment, Great Lakes and Energy | $NO_x$ | Oxides of Nitrogen |
| | | ng | Nanogram |
| MSDS | Material Safety Data Sheet | PM | Particulate Matter |
| NA | Not Applicable | PM10 | Particulate Matter equal to or less than 10 microns in diameter |
| NAAQS | National Ambient Air Quality Standards | | |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | PM2.5 | Particulate Matter equal to or less than 2.5 microns in diameter |
| NSPS | New Source Performance Standards | pph | Pounds per hour |
| NSR | New Source Review | ppm | Parts per million |
| PS | Performance Specification | ppmv | Parts per million by volume |
| PSD | Prevention of Significant Deterioration | ppmw | Parts per million by weight |
| PTE | Permanent Total Enclosure | psia | Pounds per square inch absolute |
| PTI | Permit to Install | psig | Pounds per square inch gauge |
| RACT | Reasonable Available Control Technology | scf | Standard cubic feet |
| ROP | Renewable Operating Permit | sec | Seconds |
| SC | Special Condition | $SO_2$ | Sulfur Dioxide |
| SCR | Selective Catalytic Reduction | TAC | Toxic Air Contaminant |
| SNCR | Selective Non-Catalytic Reduction | Temp | Temperature |
| SRN | State Registration Number | THC | Total Hydrocarbons |
| TEQ | Toxicity Equivalence Quotient | tpy | Tons per year |
| USEPA/EPA | United States Environmental Protection Agency | µg | Microgram |
| | | µm | Micrometer or Micron |
| VE | Visible Emissions | VOC | Volatile Organic Compounds |
| | | yr | Year |

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

## Appendix 2-2. 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 3-2. Monitoring Requirements

1. The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in **EU-UNIT3, EU-UNIT4, FG-UNITS5/6**

**NOx, and CO2 or O2 Monitoring**
**Continuous Emission Monitoring System/ Continuous Emission Rate Monitoring System/ Predictive Emission Monitoring System (CEMS/CERMS/PEMS) Requirements**

a. The CEMS/CERMS/PEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and the PS Numbers of Appendix B to 40 CFR Part 60 listed in the table below. As an alternative to PS 6 for CERMS, the flow CEMS (or PEMS) may be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR Part 75, Appendices A and B.

| Pollutant | Applicable PS |
|---|---|
| NOx | 2 |
| O2 & CO2 | 3 |
| CERMS | 6 |
| PEMS | 16 |

b. CEMS (or PEMS) shall complete a minimum of 1 cycle of operation for each successive 15-minute period.

c. The permittee shall check the zero and span calibration drifts for all CEM systems, at least once daily, and make the appropriate adjustments in accordance with the manufacturer's written procedure.

d. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

e. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS (or PEMS)/CERMS set forth in Appendix F of 40 CFR Part 60. As an alternative to Appendix F of 40 CFR Part 60, the permittee may perform the Quality Assurance Procedures for flow CEMS (or PEMS) as set forth in Appendices B of 40 CFR Part 75. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F).

f. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:

i. A report of each exceedance above the limits specified in the conditions of EU-UNIT3 and EUUNIT4. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
ii. A report of all periods of CEMS (or PEMS)/CERMS downtime and corrective action
iii. A report of the total operating time of EU-UNIT3 and EU-UNIT4 during the reporting period.
iv. A report of any periods that the CEMS (or PEMS)/CERMS exceeds the instrument range.

v. If no exceedances or CEMS (or PEMS)/CERMS downtime occurred during the reporting period, the permittee shall report that fact.

g. FG-UNITS5/6 - NOx and CO Continuous Emission Monitoring System (CEMS) (or Predictive Emissions Monitoring Systems (PEMS)) Requirements

i. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

ii. The NOx and CO CEMS (or PEMS) shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 2 and PS 4 of Appendix B, 40 CFR Part 60.

(PEMS) downtime occurred during the reporting period, the permittee shall report that fact.

All monitoring data shall be kept on file for a period of at least five years and made available to the AQD upon request.

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## Appendix 4-2. Recordkeeping

1. The permittee shall use this or a similar format for recordkeeping requirements referenced in EU-EMGENGINE.

**EU-EMGENGINE**
**EMERGENCY USE RECORDKEEPING**

**Permittee (Source Name) _____**
**ROP Number _____**
**Unit ID_____**
**Location_____**

| Beginning Date | Ending Date | Elapsed Hours and Purpose | | | Comment |
|---|---|---|---|---|---|
| | | Emergency | ≤ 100 hours annually combined | | |
| | | | Maintenance & Testing | Non-Emergency ≤ 50 hours annually | |
| 3/14/2009 | 3/16/2009 | 42 | | | Loss of electricity due to tornado damage |
| 4/01/2009 | 4/01/2009 | | 1 | | Monthly Readiness Check |
| 6/27/2009 | 6/27/2009 | | 1 | | Following bearing replacement. |
| | | | | | |
| | | | | | |
| Calendar Year Total | | 42 | 2 | 0 | |

## Appendix 5-2. Testing Procedures

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

## Appendix 6-2. 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-K3249-2016. 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-K3249-2016 is being reissued as Source-Wide PTI No. MI-PTI-K3249-XXXX.

| Permit to Install Number | ROP Revision Application Number | Description of Equipment or Change | Corresponding Emission Unit(s) or Flexible Group(s) |
|---|---|---|---|
| 75-14C | NA | Incorporate Permit to Install (PTI) No. 75-14C for removal of coal-fired conditions from EU-UNIT4, EU-ASHEXH4, EU-LIMESILO4, EU-ASHSILO4, EU-SANDSILO4. PTI No. 75-14C also incorporates EU-SPENTSANDEXH4, EU-SPENTSANDSILO4, and EU-SANDSILO4. | EU-UNIT4, EU-SPENTSANDEXH4, EU-SPENTSANDSILO4, EU-SANDSILO4 |

## Appendix 7-2. Emission Calculations

Specific emission calculations to be used with monitoring, testing or recordkeeping data are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible group Special Conditions. Therefore, this appendix is not applicable.

## Appendix 8-2. Reporting

### A. Annual, Semi-annual, and Deviation Certification Reporting

The permittee shall use the EGLE, AQD, Report Certification form (EQP 5736) and EGLE, AQD, Deviation Report form (EQP 5737) for the annual, semi-annual 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.

**MICHIGAN STATE UNIVERISTY**
**ETHYLENE OXIDE STERILIZER**
**MALFUCTION ABATEMENT PLAN**
**September 30, 2020**

## I. INTRODUCTION

Michigan State University operates an ethylene oxide sterilizer for durable medical equipment at the Veterinary Medical Center. The sterilizer uses pre-packaged 3.5 oz canisters of ethylene oxide gas injected into a chamber, all controlled automatically by the sterilizer's computer.

The ethylene oxide gas is then passed through a catalytic oxidizer where the gas is 99.9% oxidized before being released out the stack. The temperature of the catalytic oxidizer is monitored continuously.

This document presents the malfunction abatement plan for the sterilizer as required by MSU's ROP.

## II. PREVENTATIVE MAINTENANCE PROGRAM

- Veterinary Medical Center is responsible for all repairs required and related equipment cost for the sterilizer unit.

- The Central Sterilization manager is responsible for oversight of the operations.

- The Central Sterilization operators are responsible for daily operation of the sterilizer and oxidizer monitoring and scheduling maintenance as needed.

3M performs preventative maintenance on the system every six months per the manufacturer's recommendations. All maintenance shall be performed by 3M or by IPF to assure optimum performance of the sterilizer and catalytic oxidizer.

## III. OPERATING PROCEDURES AND MONITORING

A. Operating Variables monitored in order to detect a malfunction or failure.

1. Automated self-monitoring of machine components
2. Ethylene oxide gas volume
3. Cycle time
4. Temperature of catalytic oxidizer
5. Room alarm systems

B. Operating Range
1. 3.52oz. of ethylene oxide gas per cycle
2. Minimum temperature of 280 deg F in catalytic oxidizer

C. Method of Monitoring or Surveillance Procedures
1. Sterilizer machine runs self-diagnostics for problems.
2. Operator monitors machine readouts and alarms lights

## IV. MALFUNCTION ABATEMENT PROGRAM

A. Corrective Procedure or Operational Changes in the Event of a Malfunction.

- If machine is not functioning properly, it will not run. Contact 3M for repairs
- If temperature is not recorded on chart recorder connected to thermal oxidizer, do not run machine. Contact IPF for repairs

## V. EMERGENCY PHONE NUMBERS

Persons responsible for sterilizer operations

| NAME | TITLE | PHONE |
|---|---|---|
| Gina Malpeli | Supervisor, Central Sterilization | 517-353-5420 |
| Merrick Murray | Group Lead, Central Sterilization | 517-353-4956 |

**Revised 12/2015**

# MICHIGAN STATE UNIVERISTY
# VDL AND FARM LANE
# INCINERATOR MALFUCTION ABATEMENT PLAN

## I. INTRODUCTION

Michigan State University operates two pathological waste incinerators located at VDL and Incinerator Road. VDL has a rated capacity of 1,200 pounds per hour and Farm Lane 825 pounds per hour.

This document presents the Malfunction Abatement Plan (MAP) for the incinerator units as required under MSU's ROP.

The VDL incinerator has an Operator Interface Terminal (OIT) that provides system status, alarm annunciation, operator parameter entry, calibration, system tuning and refractory curing. The OIT provides real time performance and navigation keys on the screen.

The Data Acquisition System (DAS) provides data logging and report generation capabilities.

The Farm Lane Incinerator has an updated control panel with set alarm limits for temperature control and a chart recorder for continuous temperature readings.

## II. PREVENTATIVE MAINTENANCE PROGRAM

A. Director of VDL is responsible for all repairs required and related equipment cost for the VDL unit

EHS is responsible for all repairs and related equipment cost for Farm Lane Unit

EHS is responsible for daily operation of VDL and Farm Lane units. This includes; loading, ash disposal, opacity readings, monitoring and reporting.

B. Description of items or condition that will be inspected and frequency of these inspections and repairs, if needed.

Daily

- Monitor operating performance.
- Opacity visual monitoring

- Load limits for each unit
- Recording chart

Monthly

- Refractory brick in chambers
- Burners
- Load doors
- Hydraulic ram

Any major maintenance shall be performed by an outside contractor to assure optimum performance of these units.

## III. OPERATING PROCEDURES AND MONITORING

A. Operating Variables that will be monitored in order to detect a malfunction or failure. Temperature and fuel rates are set within manufactures recommendation (Consumat and ACS) and parameters within our ROP. In the event of burner malfunction the units will go into shut down and cause of the problem will be investigated and corrected. Daily monitoring includes the following.

1. Visual monitoring of opacity
2. Inlet temperature (primary)
3. Inlet temperature (secondary)
4. Visual observation of major hydraulic system leak
5. Loading door

B. Operating Range
1. Incinerator Opacity 0-20%
2. Temperature range based on ROP parameters

C. Method of Monitoring or Surveillance Procedures
1. Operators perform daily opacity monitoring of the stack discharge during periods when incinerator is operating. Operators are EPA Method 9 certified readers.
2. Operators immediately alerts supervisor if opacity exceeds 20%. Normal operator's coverage 5 days 8 hour coverage.
3. Temperature is monitored continuously through a thermocouple system.

## IV. MALFUNCTION ABATEMENT PROCEDURES

A. Corrective procedure or operational changes in the event of a malfunction.

1. Increasing opacity – The problem of a slightly gray smoke with increasing Intensity depending on load may be caused by several problems, such as:
    a) High load plastics/solids introduced into the primary chamber
    b) Burner malfunction.

c) Animal carcass with high fat content

A condition of this type is normally detected by steady increases in smoke density and visual observation of the stack. Corrective procedures may differ in some cases. The operator will consider load reduction to achieve compliance with opacity limits or shut down of unit; if required.

Temperature Fluctuation

Abnormal temperature changes (over 5 minutes) will require corrective measure to determine cause to maintain performance recommended by manufactures and ROP.

Temperature parameters are the following.

Farm Lane: Primary <1,375 or > 1,900, Secondary <1,700 or > 2,200
VDL: Primary <1,375 or > 1,850, Secondary <1,700 or > 2,100

## V. LOSS OF POWER

In the event of lost power the Farm Lane incinerator has a natural gas fired 40KV Stand-By Generator that provides power for continued operations of the incinerator. During an interruption of power an operator would manual restart the incinerator. The VDL incinerator would go automatically into shut down mode is the event of a power interruption.

Internal inspection performed during forced outages.

- Inspect incinerator for any grease leaks (if apply).
- Allow waste to burn down

## VI. EMERGENCY PHONE NUMBERS

| NAME | TITLE | HOME PHONE | CELL/PAGR |
|---|---|---|---|
| Scott Crandall | Operator | 517-623-6171 | 517-256-4459 |
| Thomas Grover | Environmental Compliance Officer | | 517-896-1005 |

**MICHIGAN STATE UNIVERSITY**
**T. B. SIMON PLANT UNITS 1, 2, AND 4**
**MALFUNCTION ABATEMENT PLAN**

July 17, 2017

## TABLE OF CONTENTS

## I. INTRODUCTION

Michigan State University (MSU) T.B. Simon Power Plant produces steam and electricity for use at the university campus, using natural gas as its sole fuel source. This malfunction abatement plan (MAP) is intended to address and minimize emissions during a malfunction on units 1, 2, and 4.

Units 1 and 2 are functionally identical natural circulation units rated at 900 psig each with a capacity of 250,000 pounds per hour (lb/hour) of steam. Nitrogen oxide ($NO_x$) emissions are controlled by $NO_x$ combustion controls (low-$NO_x$ burners).

Unit 4 is a circulating fluidized bed boiler rated at 900 psig and 350,000 lb/hour of steam. Particulate emissions from Unit 4 are controlled by a reverse air baghouse. As the unit burns natural gas only, the baghouse is maintained for the collection of sand bed material.

This document presents the MAP for T.B. Simon Power Plant Unit 1 and 2 low-$NO_x$ burners and Unit 4 baghouse. This plan is prepared in accordance with Michigan Air Pollution Control Rule R.336.1911 as required by MSU's Renewable Operating Permit for Units 1, 2, and 4.

## II. PREVENTATIVE MAINTENANCE PROGRAM

The following sections include identification of supervisory personnel responsible for overseeing inspection, maintenance, and repair of air cleaning devices; the scope and frequency of the inspections or repairs; and identification of major replacement parts to be maintained, pursuant to Rule 911(2)(a).

### A. Inspection, Maintenance, and Repair Responsibilities

Supervisory personnel responsible for testing, operation, inspections, maintenance, reporting, and repair include:

*Director of Utilities* - responsible for compliance demonstration tests for Units 1, 2, and 4 and related equipment. They are also responsible for reporting abnormal conditions and malfunctions.

*Maintenance Supervisor* – responsible for all internal inspections, determining the maintenance and cleaning requirements. This supervisor maintains inspection records.

*Electrical Engineer* - responsible for manual and digital plant controls as well as monitoring variable reporting.

*Operations Supervisor* – responsible for operation, monitoring and initiating work orders for system repair.

## B. Scope and Frequency of Inspections

The following is a description of items or conditions that will be inspected and the frequency of the inspections or repairs.

Unit 1/2 Gas Burners

*Daily*

1. Monitor $NO_x$ and $O_2$
2. Observe flame status

*12-Month Major Outage Inspection: Mechanical*

1. Inspect flame pattern and burner assembly
2. Clean or replace components of the burner, as necessary
3. Adjust the burner as necessary to optimize the flame pattern, consistent with manufacturer's specifications
4. Measure CO and $O_2$ levels in exhaust, before and after tune-up procedures

*12-Month Major Outage Inspection: Controls*

1. Calibrate $O_2$ monitor
2. Inspect and calibrate air-to-fuel ratio control system
3. Optimize CO emissions with regards to $NO_x$ emissions

Unit 4 Baghouse

*Daily*

1. Monitor baghouse operating performance, watch baghouse pressure drop and module cleaning cycles
2. Monitor spent sand hopper level

*Forced Outage*

1. Conduct internal inspection of the baghouse facility
2. Inspect clean air side of modules for spent sand leakage
3. Inspect for air leakage of access doors

*12-Month Major Outage Inspection: Mechanical*

1. Inspect clean air side of module for spent sand leaks and repair any leaks
2. Remove bags and send out for analysis (if appropriate)
3. Clean damper shafts
4. Change oil in lubricators
5. Inspect reverse air fan, rotor, and housing
6. Inspect and repair poppet covers
7. Inspect bags and bag tensioning
8. Inspect baghouse for signs of moisture infiltration

*12-Month Major Outage Inspection: Controls*

1. Calibrate $O_2$ monitor

### C. Major Spare Parts Inventory

The following recommended spare parts inventory will be maintained at the Plant. Table 1 contains a general description of parts maintained. Specific nomenclature and part numbers are maintained by our parts department.

**Table 1: General Spare Parts Inventory**

| Unit 1/2 Gas Burners | Unit 4 Baghouse |
|---|---|
| Low $NO_x$ Swirlers:<br>Clockwise<br>Counter-Clockwise<br>Gas Pokers<br>ProFlame Scanner<br>Quick Connect Cable<br>HESI Power Pack<br>HESI Cable<br>HESI Capacitor<br>HESI Transformer<br>Spark Rod Assembly<br>Spark Tip | Bags for one module<br>Tensioning springs for one module<br>Poppet dampers:<br>Cylinders<br>Rod seal/Piston seal kits<br>End Caps<br>Rod shafts<br>Ash piping tees and ceramic bead linings<br>Outlet gave valves<br>Tadpole door seals<br>Vibrators:<br>Diaphragm seals<br>Bearings<br>Belts/Belt guards<br>Transitions piece<br>Knife gate<br>RA fan bearings<br>ID fan bearings |

## III. OPERATING PROCEDURES AND MONITORING

The following sections include identification of air cleaning device operating variables to be monitored to detect malfunction or failure, as well as the normal operating ranges of these variables and descriptions of monitoring methods, pursuant to Rule 911(2)(b).

### A. Normal Operating Variables Monitored

Table 2 contains a summary of operating variables that will be monitored in order to detect a malfunction or failure.

**Table 2: Monitored Operating Variables**

| T.B. Simon Boiler | Monitored Variable | Normal Operating Range |
|---|---|---|
| Units 1/ 2 | $O_2$ concentration | 2.5 – 5.0% |
| | $NO_x$ emissions | 0.11 – 0.18 lb/mmBTU |
| | Flame status | 90 – 105% |
| | Superheater tube temperature | <900 deg F |
| | Air flow into boiler | 90 – 280 klb/hr |
| Unit 4 | Hopper level | Normal |
| | Hopper heater | On/off based on temp |
| | Inlet gas temperature | 300 – 425 deg F |
| | Baghouse differential pressure | 1.5 – 6 in WC |
| | Air flow into Baghouse | 70 – 390 klb/hr |
| | Steam flow | 125 – 350 klb/hr |
| | Stack visual emissions observations | Less than 20% |

**B. Methods of Monitoring Variables**

1. Plant supervision performs daily monitoring of the boiler operating logs.
2. Boiler operators perform an hourly observation of baghouse operation.

## IV. MALFUNCTION ABATEMENT PROGRAM

The following sections include descriptions of corrective procedures in the event of a malfunction or failure to maintain compliance with emissions standards, as required pursuant to Rule 911(2)(c).

**A. Corrective Procedures**

In the event of a malfunction, MSU will perform the following corrective procedures or operational changes. Malfunctions occur in various degrees and intensities. An overview of potential malfunctions and the scenarios that may lead to such malfunctions are summarized below. Depending on the type of problem encountered, our corrective action would vary.

Units 1/2: Burner malfunction

A burner malfunction, depending on boiler load, can be caused by any of several problems; some of which are listed below.

a. Air leakages into/out of the unit
b. Air blockages
c. Fuel line restrictions
d. Refractory damage

A condition of this type is normally detected by changes in flame pattern, from observation of the burners. Corrective procedures differ slightly in most cases.

The operating manager and maintenance supervisor normally are aware of improper burner operation due to frequent monitoring. Working with various plant operators, a complete inspection of Boiler 1 and/or 2 and burner variables is made to identify the problem. This may also consist of visually inspecting the internal burner condition or operation.

Corrective procedures differ from reducing boiler load to shutting down the unit, depending on the intensity and frequency of the occurrence. Troubleshooting of the burner system will take place to ensure low $NO_x$ and further system regulation.

Unit 4: Increasing opacity

The problem of a slightly gray stack with increasing intensity, depending on boiler load, can be caused by any of several problems listed below.

a. Bag failure
b. Low $NO_x$ burner causing excessive carbon
c. Excessive or low excess air

A condition of this type is normally detected by steady increases in smoke density and visual observation of the stack. Corrective procedures differ slightly in most cases.

The operating manager and maintenance supervisor are normally aware of deteriorating baghouse operation. Working with various plant operators, a complete inspection of Boiler 4 and baghouse variables is made to identify the problem. If the opacity levels cannot be maintained through normal readjustment or control changes, an emergency outage will be scheduled to visually inspect the internal baghouse condition.

Interim to the emergency outage, the operations manager will consider load reduction to achieve compliance with opacity limits.

Conclusion

Through frequent monitoring of Units 1, 2, and 4 and by comparing operating variables to known standards or anticipated operational ranges, the efficiency of the systems can be maintained. Extensive preventative maintenance and operational monitoring has proven successful in maintaining operation at their highest level of efficiency.

## V. EMERGENCY PHONE NUMBERS

### A. Persons Responsible for Operation and Maintenance

| NAME | TITLE | HOME PHONE | CELL PHONE |
|---|---|---|---|
| Sherri Jett | Director of Utilities | Cell | 517-282-0265 |
| Nate Verhanovitz | Performance Engineer | Cell | 989-751-2653 |
| Kirk Marble | Maintenance Supervisor | Cell | 517-449-9349 |
| Richard Johnson | Electrical Engineer | 989-834-0834 | 517-256-5809 |

**Table 1 - MSU Biotechnology Institute (BI) Building Diesel-fired Emergency RICE**

| MBI Emergency RICE Specifications (per engine) | |
|---|---|
| Operation (hr/yr) | 500 |
| Heat Input (MMBtu/hr) | 4.9 |
| Mechanical Power (bhp) | 755 |
| Genset Rating (kW) | 563 |
| Diesel Fuel Capacity (gal/hr) | 35.9 |
| Diesel Heating Value (Btu/gal) | 137,000 |
| No. of engines | 2 |

| Criteria Pollutants | Emission Factor | Emissions Factor Units | Emission Factor Basis | Annual Emissions 2 RICE (tpy) |
|---|---|---|---|---|
| $NO_x$ | 6.40 | g/kW-hr | 40 CFR 60.4205(b) [1] | 3.97 |
| CO | 3.50 | g/kW-hr | 40 CFR 60.4205(b) [1] | 2.17 |
| PM | 0.20 | g/kW-hr | 40 CFR 60.4205(b) [1] | 0.12 |
| $PM_{10}$, filterable & condensable | 5.73E-02 | lb/MMBtu | AP-42 Table 3.4-2 | 0.14 |
| $PM_{2.5}$, filterable & condensable | 5.56E-02 | lb/MMBtu | AP-42 Table 3.4-2 | 0.14 |
| $SO_2$ | 1.21E-05 | lb/hp-hr | AP-42 Table 3.4-1 [2] | 4.58E-03 |
| VOC | 7.05E-04 | lb/hp-hr | AP-42 Table 3.4-1 | 0.27 |
| **Hazardous Air Pollutants (HAPs)** | | | | |
| Acetaldehyde | 2.52E-05 | lb/MMBtu | AP-42 Table 3.4-3 | 6.20E-05 |
| Acrolein | 7.88E-06 | lb/MMBtu | AP-42 Table 3.4-3 | 1.94E-05 |
| Benzene | 7.76E-04 | lb/MMBtu | AP-42 Table 3.4-3 | 1.91E-03 |
| Formaldehyde | 7.89E-05 | lb/MMBtu | AP-42 Table 3.4-3 | 1.94E-04 |
| Propylene | 2.79E-03 | lb/MMBtu | AP-42 Table 3.4-3 | 6.86E-03 |
| Toluene | 2.81E-04 | lb/MMBtu | AP-42 Table 3.4-3 | 6.91E-04 |
| Xylenes | 1.93E-04 | lb/MMBtu | AP-42 Table 3.4-3 | 4.75E-04 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | |
| Acenaphthene | 4.68E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 1.15E-05 |
| Acenaphthylene | 9.23E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 2.27E-05 |
| Anthracene | 1.23E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 3.02E-06 |
| Benz(a)anthracene | 6.22E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 1.53E-06 |
| Benzo(a)pyrene | 2.57E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 6.32E-07 |
| Benzo(b)fluoranthene | 1.11E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 2.73E-06 |
| Benzo(g,h,i)perylene | 5.56E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 1.37E-06 |
| Benzo(k)fluoranthene | 2.18E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 5.36E-07 |
| Chrysene | 1.53E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 3.76E-06 |
| Dibenz(a,h)anthracene | 3.46E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 8.51E-07 |
| Fluoranthene | 4.03E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 9.91E-06 |
| Fluorene | 1.28E-05 | lb/MMBtu | AP-42 Table 3.4-4 | 3.15E-05 |
| Indeno(1,2,3,c,d)pyrene | 4.14E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 1.02E-06 |
| Naphthalene | 1.30E-04 | lb/MMBtu | AP-42 Table 3.4-4 | 3.20E-04 |
| Total PAH | 2.12E-04 | lb/MMBtu | AP-42 Table 3.4-4 | 5.21E-04 |
| Phenanthrene | 4.08E-05 | lb/MMBtu | AP-42 Table 3.4-4 | 1.00E-04 |
| Pyrene | 3.71E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 9.12E-06 |

[1] Emissions data based on standards from 40 CFR Part 60 Subpart IIII.

[2] Assuming 0.0015 %wt sulfur in diesel fuel (ULSD).

**Table 2 - MSU Facility for Rare Isotope Beams (FRIB) Diesel-fired Emergency RICE**

| FRIB Emergency RICE Specifications (per engine) | |
|---|---|
| Operation (hr/yr) | 500 |
| Heat Input (MMBtu/hr) | 8 |
| Mechanical Power (bhp) | 1,220 |
| Genset Rating (kW) | 800 |
| Diesel Heating Value (Btu/gal) | 137,000 |
| No. of engines | 2 |

| Criteria Pollutants | Emission Factor | Emissions Factor Units | Emission Factor Basis | Annual Emissions 2 RICE (tpy) |
|---|---|---|---|---|
| $NO_x$ | 6.40 | g/kW-hr | 40 CFR 60.4205(b) [1] | 5.64 |
| CO | 3.50 | g/kW-hr | 40 CFR 60.4205(b) [1] | 3.09 |
| PM | 0.20 | g/kW-hr | 40 CFR 60.4205(b) [1] | 0.18 |
| $PM_{10}$, filterable & condensable | 5.73E-02 | lb/MMBtu | AP-42 Table 3.4-2 | 0.23 |
| $PM_{2.5}$, filterable & condensable | 5.56E-02 | lb/MMBtu | AP-42 Table 3.4-2 | 0.22 |
| $SO_2$ | 1.21E-05 | lb/hp-hr | AP-42 Table 3.4-1 [2] | 7.40E-03 |
| VOC | 7.05E-04 | lb/hp-hr | AP-42 Table 3.4-1 | 0.43 |
| **Hazardous Air Pollutants (HAPs)** | | | | |
| Acetaldehyde | 2.52E-05 | lb/MMBtu | AP-42 Table 3.4-3 | 1.01E-04 |
| Acrolein | 7.88E-06 | lb/MMBtu | AP-42 Table 3.4-3 | 3.15E-05 |
| Benzene | 7.76E-04 | lb/MMBtu | AP-42 Table 3.4-3 | 3.10E-03 |
| Formaldehyde | 7.89E-05 | lb/MMBtu | AP-42 Table 3.4-3 | 3.16E-04 |
| Propylene | 2.79E-03 | lb/MMBtu | AP-42 Table 3.4-3 | 1.12E-02 |
| Toluene | 2.81E-04 | lb/MMBtu | AP-42 Table 3.4-3 | 1.12E-03 |
| Xylenes | 1.93E-04 | lb/MMBtu | AP-42 Table 3.4-3 | 7.72E-04 |
| **Polycyclic Aromatic Hydrocarbons (PAH)** | | | | |
| Acenaphthene | 4.68E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 1.87E-05 |
| Acenaphthylene | 9.23E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 3.69E-05 |
| Anthracene | 1.23E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 4.92E-06 |
| Benz(a)anthracene | 6.22E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 2.49E-06 |
| Benzo(a)pyrene | 2.57E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 1.03E-06 |
| Benzo(b)fluoranthene | 1.11E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 4.44E-06 |
| Benzo(g,h,i)perylene | 5.56E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 2.22E-06 |
| Benzo(k)fluoranthene | 2.18E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 8.72E-07 |
| Chrysene | 1.53E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 6.12E-06 |
| Dibenz(a,h)anthracene | 3.46E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 1.38E-06 |
| Fluoranthene | 4.03E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 1.61E-05 |
| Fluorene | 1.28E-05 | lb/MMBtu | AP-42 Table 3.4-4 | 5.12E-05 |
| Indeno(1,2,3,c,d)pyrene | 4.14E-07 | lb/MMBtu | AP-42 Table 3.4-4 | 1.66E-06 |
| Naphthalene | 1.30E-04 | lb/MMBtu | AP-42 Table 3.4-4 | 5.20E-04 |
| Total PAH | 2.12E-04 | lb/MMBtu | AP-42 Table 3.4-4 | 8.48E-04 |
| Phenanthrene | 4.08E-05 | lb/MMBtu | AP-42 Table 3.4-4 | 1.63E-04 |
| Pyrene | 3.71E-06 | lb/MMBtu | AP-42 Table 3.4-4 | 1.48E-05 |

[1] Emissions data based on standards from 40 CFR Part 60 Subpart IIII.

[2] Assuming 0.0015 %wt sulfur in diesel fuel (ULSD).

**Table 3. New Main Campus Emergency Natural Gas RICE Potential Emissions**

| **Engine Parameters** | | | | |
|---|---|---|---|---|
| Engine Horsepower Rating (Aggregate of new RICE) | 3,014 | hp | | |
| Heat Input (Estimated aggregate of new RICE) | 30 | MMBtu/hr | | |
| Hours of Operation | 500 | hrs/yr | | |
| **Criteria Pollutants** | **Emission Factor [1]** | **Emission Factor Units** | **Emission Factor Basis** | **Annual PTE (tpy) [2]** |
| $NO_x$ | 2.0 | g/hp-hr | 40 CFR 60 Subpart JJJJ | 3.3 |
| CO | 4.0 | g/hp-hr | 40 CFR 60 Subpart JJJJ | 6.6 |
| PM, filterable | 9.50E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.07 |
| $PM_{10}$, filterable & condensable | 1.94E-02 | lb/MMBtu | AP-42 Table 3.2-3 | 0.15 |
| $PM_{2.5}$, filterable & condensable | 1.94E-02 | lb/MMBtu | AP-42 Table 3.2-3 | 0.15 |
| $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42 Table 3.2-2 | 4.4E-03 |
| VOC (NSPS, excludes formaldehyde) | 1.0 | g/hp-hr | 40 CFR 60 Subpart JJJJ | 1.7 |
| VOC (PSD, includes formaldehyde) | | | VOC (NSPS) + formaldehyde | 2.1 |
| **Hazardous Air Pollutants (HAPs)** | | | | |
| 1,1,2,2-Tetrachloroethane | 4.00E-05 | lb/MMBtu | AP-42 Table 3.2-2 | 3.0E-04 |
| 1,1,2-Trichloroethane | 3.18E-05 | | AP-42 Table 3.2-2 | 2.4E-04 |
| 1,3-Butadiene | 6.63E-04 | | AP-42 Table 3.2-3 | 5.0E-03 |
| 1,3-Dichloropropene | 2.64E-05 | | AP-42 Table 3.2-2 | 2.0E-04 |
| 2-Methylnaphthalene | 3.32E-05 | | AP-42 Table 3.2-2 | 2.5E-04 |
| 2,2,4-Trimethylpentane | 2.50E-04 | | AP-42 Table 3.2-2 | 1.9E-03 |
| Acetaldehyde | 8.36E-03 | | AP-42 Table 3.2-2 | 6.3E-02 |
| Acrolein | 5.14E-03 | | AP-42 Table 3.2-2 | 3.9E-02 |
| Benzene | 1.58E-03 | | AP-42 Table 3.2-3 | 1.2E-02 |
| Benzo(e)pyrene | 4.15E-07 | | AP-42 Table 3.2-2 | 3.1E-06 |
| Biphenyl | 2.12E-04 | | AP-42 Table 3.2-2 | 1.6E-03 |
| Carbon Tetrachloride | 3.67E-05 | | AP-42 Table 3.2-2 | 2.8E-04 |
| Chlorobenzene | 3.04E-05 | | AP-42 Table 3.2-2 | 2.3E-04 |
| Chloroform | 2.85E-05 | | AP-42 Table 3.2-2 | 2.1E-04 |
| Ethylbenzene | 3.97E-05 | | AP-42 Table 3.2-2 | 3.0E-04 |
| Ethylene Dibromide (1,2-dibromoethane) | 4.43E-05 | | AP-42 Table 3.2-2 | 3.3E-04 |
| Formaldehyde | 5.28E-02 | | AP-42 Table 3.2-2 | 4.0E-01 |
| Methanol | 3.06E-03 | | AP-42 Table 3.2-3 | 2.3E-02 |
| Methylcyclohexane | 1.23E-03 | | AP-42 Table 3.2-2 | 9.2E-03 |
| Methylene Chloride | 4.12E-05 | | AP-42 Table 3.2-3 | 3.1E-04 |
| n-Hexane | 1.11E-03 | | AP-42 Table 3.2-2 | 8.3E-03 |
| Phenol | 2.40E-05 | | AP-42 Table 3.2-2 | 1.8E-04 |
| Tetrachloroethane | 2.48E-06 | | AP-42 Table 3.2-2 | 1.9E-05 |
| Toluene | 5.58E-04 | | AP-42 Table 3.2-3 | 4.2E-03 |
| Vinyl Chloride | 1.49E-05 | | AP-42 Table 3.2-2 | 1.1E-04 |
| Xylene | 1.95E-04 | | AP-42 Table 3.2-3 | 1.5E-03 |
| **Polycyclic Organic Matter (POMs)** | | | | |
| Acenaphthene | 1.25E-06 | lb/MMBtu | AP-42 Table 3.2-2 | 9.4E-06 |
| Acenaphthylene | 5.53E-06 | | AP-42 Table 3.2-2 | 4.1E-05 |
| Benzo(g,h,i)perylene | 4.14E-07 | | AP-42 Table 3.2-2 | 3.1E-06 |
| Benzo(b)fluoranthene | 1.66E-07 | | AP-42 Table 3.2-2 | 1.2E-06 |
| Chrysene | 6.93E-07 | | AP-42 Table 3.2-2 | 5.2E-06 |
| Fluoranthene | 1.11E-06 | | AP-42 Table 3.2-2 | 8.3E-06 |
| Fluorene | 5.67E-06 | | AP-42 Table 3.2-2 | 4.3E-05 |
| Naphthalene | 9.71E-05 | | AP-42 Table 3.2-3 | 7.3E-04 |
| PAH | 1.41E-04 | | AP-42 Table 3.2-3 | 1.1E-03 |
| Phenanthrene | 1.04E-05 | | AP-42 Table 3.2-2 | 7.8E-05 |
| Pyrene | 1.36E-06 | | AP-42 Table 3.2-2 | 1.0E-05 |
| Styrene | 2.36E-05 | | AP-42 Table 3.2-2 | 1.8E-04 |
| | | | **Maximum Single HAP (Hexane)** | 8.3E-03 |
| | | | **Aggregate HAPs** | 5.7E-01 |

[1] Emission rates of PM, $PM_{10}$, $PM_{2.5}$, $SO_2$ and HAPs/TACs are based upon the higher emission factors for 4-stroke lean and rich burn engines contained in AP-42 Tables 3.2-2 and 3.2-3.

[2] Annual emission rates are based on operating 500 hrs/yr.

**Table 4. New Main Campus Natural Gas-Fired Boilers Potential to Emit**

| **Specifications** | | |
|---|---|---|
| Boiler Heat Input (Aggregate of New Boilers) | 70 | MMBtu/hr |
| Operating Hours | 8,760 | hr/yr |
| Natural Gas Heating Value | 1,020 | Btu/scf |

| **Criteria Pollutants** | **Emission Factor** | **Emission Factor Units** | **Emission Factor Basis** | **Annual Emissions[1] (tpy)** |
|---|---|---|---|---|
| $NO_x$ | 100 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-1 | 30 |
| CO | 84 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-1 | 25 |
| PM, filterable | 1.9 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 0.6 |
| $PM_{10}$, filterable & condensable | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 2.3 |
| $PM_{2.5}$, filterable & condensable | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 2.3 |
| $SO_2$ | 0.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 0.2 |
| VOC | 5.5 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 1.7 |
| **Hazardous Air Pollutants (HAPs)** | | | | |
| Arsenic | 2.0E-04 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 6.01E-05 |
| Benzene | 2.1E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 6.31E-04 |
| Beryllium | 1.2E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 3.61E-06 |
| Cadmium | 1.1E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 3.31E-04 |
| Chromium | 1.4E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 4.21E-04 |
| Cobalt | 8.4E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 2.52E-05 |
| Dichlorobenzene | 1.2E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 3.61E-04 |
| Formaldehyde | 7.5E-02 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 2.25E-02 |
| Hexane | 1.8E+00 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-01 |
| Lead | 5.0E-04 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 1.50E-04 |
| Manganese | 3.8E-04 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 1.14E-04 |
| Mercury | 2.6E-04 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 7.82E-05 |
| Nickel | 2.1E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 6.31E-04 |
| Selenium | 2.4E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 7.21E-06 |
| Toluene | 3.4E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.02E-03 |
| **Polycyclic Organic Matter (POMs)** | | | | |
| 2-Methylnaphthalene | 2.4E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 7.21E-06 |
| 3-Methylcholanthrene | 1.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-07 |
| 7,12-Dimethylbenz(a)anthracene | 1.6E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 4.81E-06 |
| Acenaphthene | 1.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-07 |
| Acenaphthylene | 1.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-07 |
| Anthracene | 2.4E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 7.21E-07 |
| Benz(a)anthracene | 1.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-07 |
| Benzo(a)pyrene | 1.2E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 3.61E-07 |
| Benzo(b)fluoranthene | 1.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-07 |
| Benzo(g,h,i)perylene | 1.2E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 3.61E-07 |
| Benzo(k)fluoranthene | 1.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-07 |
| Chrysene | 1.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-07 |
| Dibenz(a,h)anthracene | 1.2E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 3.61E-07 |
| Fluoranthene | 3.0E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 9.02E-07 |
| Fluorene | 2.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 8.42E-07 |
| Indeno(1,2,3,c,d)pyrene | 1.8E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.41E-07 |
| Naphthalene | 6.1E-04 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.83E-04 |
| Phenanthrene | 1.7E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.11E-06 |
| Pyrene | 5.0E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.50E-06 |
| | | | **Maximum Single HAP (Hexane)** | 0.5 |
| | | | **Aggregate HAPs** | 0.6 |

[1] Annual emission rates are based on the maximum capacity of the boiler(s) and continuous operation at 8,760 hours/year.

**Table 5a. T.B. Simon Power Plant - Natural Gas Boilers Criteria Pollutant Potential to Emit**

| Specifications | EU-UNIT1 | | | | EU-UNIT2 | | | |
|---|---|---|---|---|---|---|---|---|
| Maximum Rated Heat Input | 330 | MMBtu/hr | | | 330 | MMBtu/hr | | |
| Operating Hours | 8,760 | hr/yr | | | 8,760 | hr/yr | | |
| Natural Gas Heating Value | 1,020 | Btu/scf | | | 1,020 | Btu/scf | | |
| **Criteria Pollutants** | **Emission Factor** | **Emission Factor Unit** | **Emission Factor Basis** | **Annual Emissions (tpy)** | **Emission Factor** | **Emission Factor Unit** | **Emission Factor Basis** | **Annual Emissions (tpy)** |
| $NO_x$ | 140 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-1 | 198 | 140 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-1 | 198 |
| CO | 84 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-1 | 119 | 84 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-1 | 119 |
| $SO_2$ | 0.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 0.9 | 0.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 0.9 |
| PM, filterable | 1.9 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 2.7 | 1.9 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 2.7 |
| $PM_{10,}$ filterable & condensable | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 10.8 | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 10.8 |
| $PM_{2.5,}$ filterable & condensable | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 10.8 | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 10.8 |
| VOC | 5.5 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 7.8 | 5.5 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 7.8 |
| **Specifications** | **EU-UNIT3** | | | | **EU-UNIT4** | | | |
| Maximum Rated Heat Input | 460 | MMBtu/hr | | | 500 | MMBtu/hr | | |
| Operating Hours | 8,760 | hr/yr | | | 8,760 | hr/yr | | |
| Natural Gas Heating Value | 1,020 | Btu/scf | | | 1,020 | Btu/scf | | |
| **Criteria Pollutants** | **Emission Factor** | **Emission Factor Unit** | **Emission Factor Basis** | **Annual Emissions (tpy)** | **Emission Factor** | **Emission Factor Unit** | **Emission Factor Basis** | **Annual Emissions (tpy)** |
| $NO_x$ | 0.2 | lb/MMBtu | Permit to Install No. 75-14C | 403 | 0.076 | lb/MMBtu | Permit to Install No. 75-14C | 166 |
| CO | 84 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-1 | 166 | 84 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-1 | 180 |
| $SO_2$ | 0.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 1.2 | 0.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 1.3 |
| PM, filterable | 1.9 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 3.8 | 1.9 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 4.1 |
| $PM_{10,}$ filterable & condensable | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 15.0 | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 16.3 |
| $PM_{2.5,}$ filterable & condensable | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 15.0 | 7.6 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 16.3 |
| VOC | 5.5 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 10.9 | 5.5 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 11.8 |

**Table 5b. T. B. Simon Power Plant - Natural Gas Boilers Hazardous Air Pollutant Potential to Emit**

| **Specifications** | | | |
|---|---|---|---|
| Aggregate Maximum Rated Heat Input | 1,620 | MMBtu/hr | |
| Operating Hours | 8,760 | hr/yr | |
| Natural Gas Heating Value | 1,020 | Btu/scf | |

| **Hazardous Air Pollutants (HAPs)** | **Emission Factor** | **Emission Factor Unit** | **Emission Factor Basis** | **Annual Emissions (tpy)** |
|---|---|---|---|---|
| Arsenic | 2.00E-04 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 1.39E-03 |
| Benzene | 2.10E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.46E-02 |
| Beryllium | 1.20E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 8.35E-05 |
| Cadmium | 1.10E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 7.65E-03 |
| Chromium | 1.40E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 9.74E-03 |
| Cobalt | 8.40E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 5.84E-04 |
| Dichlorobenzene | 1.20E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 8.35E-03 |
| Formaldehyde | 7.50E-02 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 5.22E-01 |
| Hexane | 1.80E+00 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 12.5 |
| Lead | 5.00E-04 | lb/MMscf | AP-42 Ch. 1.4, Table 1.4-2 | 3.48E-03 |
| Manganese | 3.80E-04 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 2.64E-03 |
| Mercury | 2.60E-04 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 1.81E-03 |
| Nickel | 2.10E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 1.46E-02 |
| Selenium | 2.40E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-4 | 1.67E-04 |
| Toluene | 3.40E-03 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 2.37E-02 |
| **Polycyclic Organic Matter (POMs)** | | | | |
| 2-Methylnaphthalene | 2.40E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.67E-04 |
| 3-Methylcholanthrene | 1.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.25E-05 |
| 7,12-Dimethylbenz(a)anthracene | 1.60E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.11E-04 |
| Acenaphthene | 1.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.25E-05 |
| Acenaphthylene | 1.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.25E-05 |
| Anthracene | 2.40E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.67E-05 |
| Benz(a)anthracene | 1.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.25E-05 |
| Benzo(a)pyrene | 1.20E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 8.35E-06 |
| Benzo(b)fluoranthene | 1.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.25E-05 |
| Benzo(g,h,i)perylene | 1.20E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 8.35E-06 |
| Benzo(k)fluoranthene | 1.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.25E-05 |
| Chrysene | 1.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.25E-05 |
| Dibenz(a,h)anthracene | 1.20E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 8.35E-06 |
| Fluoranthene | 3.00E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 2.09E-05 |
| Fluorene | 2.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.95E-05 |
| Indeno(1,2,3,c,d)pyrene | 1.80E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.25E-05 |
| Naphthalene | 6.10E-04 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 4.24E-03 |
| Phenanthrene | 1.70E-05 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 1.18E-04 |
| Pyrene | 5.00E-06 | lb/MMscf | AP-42, Ch. 1.4, Table 1.4-3 | 3.48E-05 |
| | | | **Maximum Single HAP (Hexane)** | 12.5 |
| | | | **Aggregate HAPs** | 13.1 |