**From:** Amy D. Kapuga
**To:** EGLE-ROP
**Cc:** Orent, Kelly (EGLE); McCann, Gina (EGLE); Gentle, Nathanael (EGLE)
**Subject:** N2901 ROP Renewal Application
**Date:** Monday, July 1, 2024 10:18:58 AM
**Attachments:** image001.png
N2901 Muskgon River ROP Renewal Application.zip



Attached is the Renewable Operating Permit (ROP) renewal application for the Consumers Energy Company's Muskegon River Compressor Station (N2901). A hardcopy of the application, with original signature, will be mailed to the Bay City District Office.

If you have any questions, please contact me at 517-788-2201 or amy.kapuga@cmsenergy.com.

Amy Kapuga, P.E. • Principal Environmental Engineer • Consumers Energy • EQ&S-Air Quality Section • 1945 W. Parnall Rd. Jackson, MI 49201 • P22-330 • 517-788-2201

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**From:** Amy D. Kapuga
**Sent:** Monday, July 1, 2024 9:15 AM
**To:** 'EGLE-ROP@michigan.gov' <EGLE-ROP@michigan.gov>
**Cc:** 'orentk@michigan.gov' <orentk@michigan.gov>
**Subject:** N2901 ROP Renewal Application

Resending (originally submitted on 6/27/2024)

Amy Kapuga, P.E. • Principal Environmental Engineer • Consumers Energy • EQ&S-Air Quality Section • 1945 W. Parnall Rd. Jackson, MI 49201 • P22-330 • 517-788-2201

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**From:** Amy D. Kapuga
**Sent:** Thursday, June 27, 2024 8:55 AM
**To:** 'EGLE-ROP@michigan.gov' <EGLE-ROP@michigan.gov>
**Subject:** N2901 ROP Renewal Application

Attached is the Renewable Operating Permit (ROP) renewal application for the Consumers Energy Company's Muskegon River Compressor Station (N2901). A hardcopy of the application, with original signature, will be mailed to the Bay City District Office.

If you have any questions, please contact me at 517-788-2201 or amy.kapuga@cmsenergy.com.

**Amy Kapuga, P.E. – Principal Environmental Engineer**
EQ&S - Air Quality Section
Phone: 517-788-2201
WORKING TO DELIVER THE ENERGY YOU NEED, WHENEVER YOU NEED IT.
**THAT'S OUR PROMISE TO MICHIGAN!**

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) |
|---|---|---|---|---|
| N2901 | 4922 | 221210 | MI-ROP-N2901-2020 | |

Source Name: Consumers Energy Company – Muskegon River Compressor Station

Street Address: 8613 Pine Road

| City | State | ZIP Code | County |
|---|---|---|---|
| Marion | MI | 49665 | Clare |

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

Source Description: A natural gas compressor station. The primary function is to move natural gas into and out of underground storage reservoirs and along the intrastate natural gas pipeline system.

☐ 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) |
|---|---|
| Consumers Energy Company | |

Mailing address (☐ check if same as source address): One Energy Plaza

| City | State | ZIP Code | County | Country |
|---|---|---|---|---|
| Jackson | MI | 49201 | Jackson | 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: N2901 | Section Number (if applicable): |
|---|---|

## PART A: GENERAL INFORMATION (continued)

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

### CONTACT INFORMATION

| Contact 1 Name | | | Title | |
|---|---|---|---|---|
| Amy Kapuga | | | Principal Environmental Engineer | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| Consumers Energy Company, 1945 West Parnall Road, P22-330 | | | | |
| City | State | ZIP Code | County | Country |
| Jackson | MI | 49201 | Jackson | USA |
| Phone number | | E-mail address | | |
| 517-788-2201 | | AMY.KAPUGA@CMSENERGY.COM | | |

| Contact 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 | | |
| | | | | |

### RESPONSIBLE OFFICIAL INFORMATION

| Responsible Official 1 Name | | | Title | |
|---|---|---|---|---|
| Avelock Robinson | | | Director, Compression Operations | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| Consumers Energy Company, St. Clair Compressor Station, 10021 Marine City Highway | | | | |
| City | State | ZIP Code | County | Country |
| Ira Township | MI | 48023 | St. Clair | USA |
| Phone number | | E-mail address | | |
| 586-716-3326 | | AVELOCK.ROBINSON@CMSENERGY.COM | | |

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

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART B: APPLICATION SUBMITTAL and CERTIFICATION by Responsible Official

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

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

| **Compliance Statement** | |
|---|---|
| This source is in compliance with **all** of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP. | ☒ Yes ☐ No |
| This source will continue to be in compliance with all of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP. | ☒ Yes ☐ No |
| This source will meet in a timely manner applicable requirements that become effective during the permit term. | ☒ Yes ☐ No |
| The method(s) used to determine compliance for each applicable requirement is/are the method(s) specified in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and all other applicable requirements not currently contained in the existing ROP. | |
| If any of the above are checked No, identify the emission unit(s) or flexible group(s) affected and the specific condition number(s) or applicable requirement for which the source is or will be out of compliance at the time of issuance of the ROP renewal on an AI-001 Form. Provide a compliance plan and schedule of compliance on an AI-001 Form. | |

| **Name and Title of the Responsible Official (Print or Type)** | |
|---|---|
| ***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.*** | |
| **Signature of Responsible Official** | **Date** 6.26.2024 |

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART C: SOURCE REQUIREMENT INFORMATION

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

| | | |
|---|---|---|
| C1. | Actual emissions and associated data from **all** emission units with applicable requirements (including those identified in the existing ROP, Permits to Install and other equipment that have not yet been incorporated into the ROP) are required to be reported in MAERS. Are there any emissions and associated data that have not been reported in MAERS for the most recent emissions reporting year? If Yes, identify the emission unit(s) that was/were not reported in MAERS on an AI-001 Form. Applicable MAERS form(s) for unreported emission units must be included with this application. | ☐ Yes ☒ No |
| C2. | Is this source subject to the federal regulations on ozone-depleting substances? (40 CFR Part 82) | ☐ Yes ☒ No |
| C3. | Is this source subject to the federal Chemical Accident Prevention Provisions? (Section 112(r) of the Clean Air Act Amendments, 40 CFR Part 68)<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 EGLE, 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-**PARTC

## 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)] |
|---|---|---|---|
| EUBOILER1 | 0.4 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar KBN 400) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUBOILER2 | 0.4 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar KBN 400) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUBOILER10 | 0.5 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar Knight) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUBOILER11 | 0.5 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar Knight) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUBOILER12 | 0.5 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar Knight) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUHEATER1 | 125,000 Btu/hr gas unit heater in Plant 3 Aux Building (comfort heat) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUHEATER2 | 125,000 Btu/hr gas unit heater in Plant 3 Aux Building (comfort heat) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUSPACEHTRS | Eight (8) Natural gas-fired space heaters for building heat. Total combined capacity of 824,000 Btu/hr | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUTANK10 | 1,000-gallon gasoline AST | Rule 212(4)(d) | Rule 284(2)(g)(i) |
| EUTANK12 | 2,900-gallon condensate/lube oil AST | Rule 212(4)(d) | Rule 284(2)(e) |
| EUTANK13 | 6,000-gallon TEG/water process tank (subgrade) | Rule 212(4)(d) | Rule 284(2)(i) |
| EUTANK19 | 5,000-gallon TEG AST | Rule 212(4)(d) | Rule 284(2)(i) |

Comments:

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART E: EXISTING ROP INFORMATION

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

| | |
|---|---|
| E1. Does the source propose to make any additions, changes or deletions to terms, conditions and underlying applicable requirements as they appear in the existing ROP?<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:

E.1 EUDEGREASER1 is an aqueous-based parts washer [exempt per Rule 281(2)(k)]. Pursuant to Rule 212(3)(b), the unit does not have to be included in the ROP or listed in the Staff Report.

E.4 EUENGINE306, EUENGINE316, EUENGINE319, EUENGINE320, EUENGINE3-1 and EUENGINE3-2 were all disconnected from the fuel gas system (retired in place) as of 9/20/2020 and should be removed from the ROP

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART F: PERMIT TO INSTALL (PTI) INFORMATION

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

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

| Permit to Install Number | Emission Units/Flexible Group ID(s) | Description (*Include Process Equipment, Control Devices and Monitoring Devices*) | Date Emission Unit was Installed/ Modified/ Reconstructed |
|---|---|---|---|
| PTI 16-21A | EUTURBINE2-2 FGMACTYYYY | Natural gas-fired Solar Taurus 70 turbine that is equipped with dry low-NOx combustion control (SoLoNO$_x$). | 2/9/2022 |
| | | | |
| | | | |
| | | | |

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-**PARTF

| SRN: N2901 | Section Number (if applicable): |
|---|---|

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

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

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

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

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

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

Comments:

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART H: REQUIREMENTS FOR ADDITION OR CHANGE

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

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

| | |
|---|---|
| H1. Are there changes that need to be incorporated into the ROP that have not been identified in Parts F and G? If Yes, answer the questions below. | ☒ Yes ☐ No |
| H2. Are there any proposed administrative changes to any of the existing emission unit names, descriptions or control devices in the ROP? If Yes, describe the changes in questions H8 – H16 below and in the affected Emission Unit Table(s) in the mark-up of the ROP. | ☐ Yes ☒ No |
| H3. Does the source propose to add a new emission unit or flexible group to the ROP not previously identified in Parts F or G? If Yes, identify and describe the emission unit name, process description, control device(s), monitoring device(s) and applicable requirements in questions H8 – H16 below and in a new Emission Unit Table in the mark-up of the ROP. See instructions on how to incorporate a new emission unit/flexible group into the ROP. | ☐ Yes ☒ No |
| H4. Does the source propose to add new state or federal regulations to the existing ROP?<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: N2901 | Section Number (if applicable): |
|---|---|

## 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

Delete requirements for EUDEGREASER1

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

Delete requirements for EUDEGREASER1

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

Delete requirements for EUDEGREASER1

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

Delete requirements for EUDEGREASER1

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

Delete requirements for EUDEGREASER1

## 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: N2901 | Section Number (if applicable): |
|---|---|

1. Additional Information ID
**AI-**PARTC

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

C.4 Criteria Pollutant PTE Calculations

C.5 HAP PTE Calculations

# Muskegon River Compressor Station (N2901)
## Criteria Pollutants PTE Calculations

| Equipment | No. of Units | Fuel | Size | Units | Size | Units | Make/Model | Controls | Criteria Pollutant | Emission Factor | EF Units | Source | PTE (lb/hr) | PTE (tpy) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EUTURBINERT248 | 1 | Natural Gas | 88.7 | MMBtu/hr | 10,500 | HP | Pratt & Whitney GG3C-1<br>Cooper Bessemer RFB-24 | | CO | 8.20E-02 | lb/MMBtu | AP-42, Table 3.1-2a | 7.27 | 31.86 |
| | | | | | | | | | $NO_x$ | 1.30E-01 | lb/MMBtu | AP-42, Table 3.1-2a | 11.53 | 50.51 |
| | | | | | | | | | VOC | 2.10E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.19 | 0.82 |
| | | | | | | | | | PM | 6.60E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.59 | 2.56 |
| | | | | | | | | | PM10 | 1.90E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.17 | 0.74 |
| | | | | | | | | | PM2.5 | 4.70E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.42 | 1.83 |
| | | | | | | | | | $SO_2$ | 3.40E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.30 | 1.32 |
| EUTURBINE2-2 | 1 | Natural Gas | 96.5 | MMBtu/hr | 11,419 | HP | Solar Taurus 70 | SoLoNOx | CO | 0.056 | lb/MMBtu | Vendor | 5.404 | 23.67 |
| | | | | | | | | | $NO_x$ | 0.055 | lb/MMBtu | Vendor | 5.3075 | 23.25 |
| | | | | | | | | | VOC | 0.009 | lb/MMBtu | Vendor | 0.8685 | 3.80 |
| | | | | | | | | | PM | 6.60E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.6369 | 2.79 |
| | | | | | | | | | PM10 | 1.90E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.18335 | 0.80 |
| | | | | | | | | | PM2.5 | 4.70E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.45355 | 1.99 |
| | | | | | | | | | $SO_2$ | 3.40E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.3281 | 1.44 |
| H COMPRESSORS (Engine H9, Engine H10, Engine H11 & Engine H12) | 4 | Natural Gas | 21 | MMBtu/hr | 2,600 | HP | Clark HBA10 | | CO | 3.86E-01 | lb/MMBtu | AP-42, Table 3.2-1 | 32.42 | 142.02 |
| | | | | | | | | | $NO_x$ | 3.17E+00 | lb/MMBtu | AP-42, Table 3.2-1 | 266.28 | 1,166.31 |
| | | | | | | | | | VOC | 1.20E-01 | lb/MMBtu | AP-42, Table 3.2-1 | 10.08 | 44.15 |
| | | | | | | | | | PM | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 3.23 | 14.13 |
| | | | | | | | | | PM10 | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 3.23 | 14.13 |
| | | | | | | | | | PM2.5 | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 3.23 | 14.13 |
| | | | | | | | | | $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42, Table 3.2-1 | 0.05 | 0.22 |
| T COMPRESSORS (Engine T11 & Engine T12) | 2 | Natural Gas | 24 | MMBtu/hr | 3,400 | HP | Clark TLA-10 | | CO | 3.86E-01 | lb/MMBtu | AP-42, Table 3.2-1 | 18.53 | 81.15 |
| | | | | | | | | | $NO_x$ | 3.17E+00 | lb/MMBtu | AP-42, Table 3.2-1 | 152.16 | 666.46 |
| | | | | | | | | | VOC | 1.20E-01 | lb/MMBtu | AP-42, Table 3.2-1 | 5.76 | 25.23 |
| | | | | | | | | | PM | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 1.84 | 8.07 |
| | | | | | | | | | PM10 | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 1.84 | 8.07 |
| | | | | | | | | | PM2.5 | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 1.84 | 8.07 |
| | | | | | | | | | $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42, Table 3.2-1 | 0.03 | 0.12 |
| FGAUXGENS (Aux Gen 1A & Aux Gen 2A) | 2 | Natural Gas | 3.8 | MMBtu/hr | | | | | CO | 3.72E+00 | lb/MMBtu | AP-42, Table 3.2-3 | 28.27 | 123.83 |
| | | | | | | | | | $NO_x$ | 2.21E+00 | lb/MMBtu | AP-42, Table 3.2-3 | 16.80 | 73.57 |
| | | | | | | | | | VOC | 2.96E-02 | lb/MMBtu | AP-42, Table 3.2-3 | 0.22 | 0.99 |
| | | | | | | | | | PM | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.07 | 0.32 |
| | | | | | | | | | PM10 | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.07 | 0.32 |
| | | | | | | | | | PM2.5 | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.07 | 0.32 |
| | | | | | | | | | $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42, Table 3.2-3 | 0.004 | 0.02 |
| EUAUXGEN3 | 1 | Natural Gas | 4.8 | MMBtu/hr | | | | | CO | 3.72E+00 | lb/MMBtu | AP-42, Table 3.2-3 | 17.86 | 78.21 |
| | | | | | | | | | $NO_x$ | 2.21E+00 | lb/MMBtu | AP-42, Table 3.2-3 | 10.61 | 46.46 |
| | | | | | | | | | VOC | 2.96E-02 | lb/MMBtu | AP-42, Table 3.2-3 | 0.14 | 0.62 |
| | | | | | | | | | PM | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.05 | 0.20 |
| | | | | | | | | | PM10 | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.05 | 0.20 |
| | | | | | | | | | PM2.5 | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.05 | 0.20 |
| | | | | | | | | | $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42, Table 3.2-3 | 0.003 | 0.01 |
| EUBLR9 | 1 | nat gas | 3.35 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.28 | 1.21 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.33 | 1.44 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.02 | 0.08 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.02 | 0.11 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.02 | 0.11 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.02 | 0.11 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.009 |
| EUFUELHTR | 1 | nat gas | 0.25 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.02 | 0.09 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.02 | 0.11 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.001 | 0.01 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.01 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.01 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.01 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.0001 | 0.001 |

## Muskegon River Compressor Station (N2901)
## Criteria Pollutants PTE Calculations

| Equipment | No. of Units | Fuel | Size | Units | Size | Units | Make/Model | Controls | Criteria Pollutant | Emission Factor | EF Units | Source | PTE (lb/hr) | PTE (tpy) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EUFUELHTR1 | 1 | nat gas | 0.45 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.04 | 0.16 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.04 | 0.19 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.01 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.003 | 0.01 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.003 | 0.01 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.003 | 0.01 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.0003 | 0.001 |
| EUREBOILER | 1 | nat gas | 1 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.08 | 0.36 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.10 | 0.43 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.02 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.03 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.03 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.03 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.001 | 0.00 |
| TO (combustion) | 1 | nat gas | 1.5 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.12 | 0.54 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.15 | 0.64 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.04 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.05 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.05 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.05 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.001 | 0.00 |
| EUGLYCDEHY | | | | | | | | | VOC | GRI-GLYCalc | | | 2.60 | 11.41 |
| | | | | | | | | | | | | **CO PTE** | | 483.10 |
| | | | | | | | | | | | | **$NO_x$ PTE** | | 2,029.36 |
| | | | | | | | | | | | | **VOC PTE** | | 87.17 |
| | | | | | | | | | | | | **PM PTE** | | 28.28 |
| | | | | | | | | | | | | **PM10 PTE** | | 24.47 |
| | | | | | | | | | | | | **PM2.5 PTE** | | 26.74 |
| | | | | | | | | | | | | **$SO_2$ PTE** | | 3.15 |

**Muskegon River Compressor Station (N2901)**
**HAP PTE Calculations**

| Equipment | No. of Units | Fuel | Size | Units | Size | Units | Make/Model | Controls | HAP | Emission Factor | EF Units | Source | HAP Emissions (lb/hr) | HAP Emissions (tpy) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EUTURBINERT248 | 1 | Natural Gas | 88.7 | MMBtu/hr | 10,500 | HP | Pratt & Whitney GG3C-1<br><br>Cooper Bessemer RFB-24 | None | **Formaldehyde** | 7.10E-04 | lb/MMBtu | AP-42 Table 3.1-3 | 0.06 | 0.28 |
| | | | | | | | | | Acrolein | 6.40E-06 | lb/MMBtu | AP-42 Table 3.1-3 | 0.001 | 0.002 |
| | | | | | | | | | Acetaldehyde | 4.00E-05 | lb/MMBtu | AP-42 Table 3.1-3 | 0.004 | 0.02 |
| | | | | | | | | | Benzene | 1.20E-05 | lb/MMBtu | AP-42 Table 3.1-3 | 0.001 | 0.00 |
| | | | | | | | | | Toluene | 1.30E-04 | lb/MMBtu | AP-42 Table 3.1-3 | 0.01 | 0.05 |
| EUTURBINE2-2 | 1 | Natural Gas | 96.5 | MMBtu/hr | 11,419 | HP | Solar Taurus 70 | SoLoNOx | **Formaldehyde** | 7.10E-04 | lb/MMBtu | AP-42 Table 3.1-3 | 0.07 | 0.30 |
| | | | | | | | | | Acrolein | 6.40E-06 | lb/MMBtu | AP-42 Table 3.1-3 | 0.001 | 0.003 |
| | | | | | | | | | Acetaldehyde | 4.00E-05 | lb/MMBtu | AP-42 Table 3.1-3 | 0.004 | 0.02 |
| | | | | | | | | | Toluene | 1.20E-05 | lb/MMBtu | AP-42 Table 3.1-3 | 0.001 | 0.01 |
| | | | | | | | | | Benzene | 1.30E-04 | lb/MMBtu | AP-42 Table 3.1-3 | 0.01 | 0.05 |
| H COMPRESSORS (Engine H9, Engine H10, Engine H11 & Engine H12) | 4 | Natural Gas | 21 | MMBtu/hr | 2,600 | HP | Clark HBA10 | None | **Formaldehyde** | 5.52E-02 | lb/MMBtu | AP-42 Table 3.2-1 | 4.64 | 20.31 |
| | | | | | | | | | Acrolein | 7.78E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.65 | 2.86 |
| | | | | | | | | | Acetaldehyde | 7.76E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.65 | 2.86 |
| | | | | | | | | | Methanol | 2.48E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.21 | 0.91 |
| | | | | | | | | | Benzene | 1.94E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.16 | 0.71 |
| T COMPRESSORS (Engine T11 & Engine T12) | 2 | Natural Gas | 24 | MMBtu/hr | 3,400 | HP | Clark TLA-10 | None | **Formaldehyde** | 5.52E-02 | lb/MMBtu | AP-42 Table 3.2-1 | 2.65 | 11.61 |
| | | | | | | | | | Acrolein | 7.78E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.37 | 1.64 |
| | | | | | | | | | Acetaldehyde | 7.76E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.37 | 1.63 |
| | | | | | | | | | Methanol | 2.48E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.12 | 0.52 |
| | | | | | | | | | Benzene | 1.94E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.09 | 0.41 |
| FGAUXGENS (Aux Gen 1A & Aux Gen 2A) | 2 | Natural Gas | 3.8 | MMBtu/hr | | | | None | **Formaldehyde** | 2.05E-02 | lb/MMBtu | AP-42 Table 3.2-3 | 0.16 | 0.68 |
| | | | | | | | | | Acrolein | 2.63E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.02 | 0.09 |
| | | | | | | | | | Acetaldehyde | 2.79E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.02 | 0.09 |
| | | | | | | | | | Methanol | 3.06E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.02 | 0.10 |
| | | | | | | | | | Benzene | 1.58E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.05 |
| EUAUXGEN3 | 1 | Natural Gas | 4.8 | MMBtu/hr | | | | None | **Formaldehyde** | 2.05E-02 | lb/MMBtu | AP-42 Table 3.2-3 | 0.10 | 0.43 |
| | | | | | | | | | Acrolein | 2.63E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.06 |
| | | | | | | | | | Acetaldehyde | 2.79E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.06 |
| | | | | | | | | | Methanol | 3.06E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.06 |
| | | | | | | | | | Benzene | 1.58E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.03 |
| EUBLR9 | 1 | nat gas | 3.35 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.01 | 0.03 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0002 | 0.001 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.00001 | 0.00003 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000004 | 0.00002 |
| EUFUELHTR | 1 | nat gas | 0.25 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0004 | 0.002 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.00002 | 0.0001 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000001 | 0.000002 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0000003 | 0.000001 |
| EUFUELHTR1 | 1 | nat gas | 0.45 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0008 | 0.003 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.00003 | 0.0001 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000001 | 0.000004 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0000005 | 0.000002 |
| EUREBOILER | 1 | nat gas | 1 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.002 | 0.008 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.00007 | 0.0003 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000002 | 0.000009 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000001 | 0.000005 |
| TO (combustion) | 1 | nat gas | 1.5 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.003 | 0.012 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0001 | 0.0005 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000003 | 0.000014 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000002 | 0.000008 |
| EUGLYCDEHY | TEG Glycol Dehydration System | | | | | | | | BTEX | Permit Limit | | | 1.68 | 7.38 |
| | | | | | | | | | Heptanes | GRI-GLYCalc | | | 1.46 | 6.40 |
| | | | | | | | | | Hexanes | GRI-GLYCalc | | | 0.32 | 1.40 |
| | | | | | | | | | | | | **SINGLE HAP (FORMALDEHYDE) PTE** | | 33.61 |
| | | | | | | | | | | | | **TOTAL HAP PTE** | | 61.08 |

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: N2901 | Section Number (if applicable): |
|---|---|

1. Additional Information ID
**AI-**PARTE

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

E.1 EUDEGREASER1 is an aqueous-based parts washer [exempt per Rule 281(2)(k)]. Pursuant to Rule 212(3)(b), the unit does not have to be included in the ROP or listed in the Staff Report.

E.4 Copy of the Rule 215(1) Notification of Change, dated 12/2/2021, for the removal of the following six (6) engines:

EUENGINE306
EUENGINE316
EUENGINE319
EUENGINE320
EUENGINE3-1
EUENGINE3-2

**Consumers Energy** *Memorandum*

*To:* Parish Geers, Field Leader

*From:* Amy Kapuga, Environmental Services-AQ

*Date:* March 7, 2022

*Subject:* Muskegon River Compressor Station
Hotsy Parts Washer

*CC:* Janet Simon, Sr. Field Leader
Janet Zondlak, Field Environmental Coordinator
Muskegon River Compressor Station Compliance File

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**Description**

A Hotsy Model 7320 Automatic Parts washer is located in the north end of the Weld Shop at the Muskegon River Compressor Station. The washer reaches a temperature of 160°F-180°F. It is considered an "Aqueous-based parts washer" as defined in R 336.1101(q):

> "Aqueous based parts washer" means a tank containing liquid with a volatile organic compound content of less than 5%, by weight, and at a temperature below its boiling point that is used to spray, brush, flush, or immerse metallic and/or plastic objects for the purpose of cleaning or degreasing.

The product used in the parts washer is Stripper 410 Hot Tank Dip for Alum. It is a powder, with a volatile organic compound (VOC) content of 1-5%, by weight (mineral spirits). The boiling point of mineral spirits is 310°F-395°F.

**Air Quality Considerations**

The potential air quality regulations are limited to Michigan AQD Rule 201(1), which requires a permit to install before a person can install, construct, reconstruct, relocate or modify and process or process equipment.

Rule 281(2)(k) exempts *"aqueous based parts washers"* from obtaining a permit to install.

**Summary and Conclusions**

Based upon our review of the relevant air quality regulations, along with the provided information, the Hotsy Parts washer located at the Muskegon River Compressor Station is exempt from the Michigan Rule 201(1) permitting requirements under Rule 281(2)(k). Pursuant to Rule 212(3)(b), the unit does not have to be included in the renewable operating permit (ROP) or listed in the Staff Report.

Warsaw Chemical HOLDINGS LLC
P.O. BOX 858 • Warsaw, Indiana 46581
800-548-3396 • www.warsaw-chem.com



Version: 1.0031
Revision Date: 01/25/2019
Print Date: 10/17/2019

# SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Stripper 410 Hot Tank Dip For Alum

PRODUCT USE: Hot tank dip/cleaner

MANUFACTURED FOR: Warsaw Chemical Holdings LLC.
P.O. Box 858
Warsaw, IN 46581

INFORMATION PHONE: Tel: 1-800-548-3396
Fax: 1-574-267-3884

EMERGENCY PHONE: INFOTRAC
1-800-535-5053 USA & Canada
352-323-3500 International

# SECTION 2 - HAZARD(S) IDENTIFICATION

CLASSIFICATION: Acute Toxicity - Oral: Category 5
Skin Corrosion: Category 1B
Eye Damage: Category 2A

PICTOGRAMS:

GHS ELELMENTS:

SIGNAL WORD: Danger

HAZARD STATEMENT(S): H303 | May be harmful if swallowed.
H314 | Causes severe skin burns and eye damage.
H319 | Causes serious eye irritation.

PRECAUTIONARY STATEMENT(S): P260 | Do not breathe dust/fume/gas/mist/vapours/spray.
P264 | Wash any exposed body parts thoroughly after handling.
P280 | Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 | Immediately call a POISON CENTER or doctor/physician.
P312 | Call a POISON CENTER or doctor/physician if you feel unwell.
P321 | Specific treatment (see supplemental first aid instruction on this label if immediate administration of antidote/specific measures/cleansing agent/immediate measures is/are appropriate/required).
P337 + P313 | If eye irritation persists: Get medical advice/attention.

P405 | Store locked up.
P501 | Dispose of contents/container to appropriate waste disposal entity in accordance with local/regional/national/international regulation.

ADDITIONAL PRECAUTIONS: None Known

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

| HAZARDOUS INGREDIENT | CAS # | PERCENT |
|---|---|---|
| Sodium Metasilicate Pentahydrate | 10213-79-3 | 40 - 50% |
| Sodium tripolyphosphate | 7758-29-4 | 30 - 40% |
| Alkali Salt | 497-19-8 | 30 - 40% |
| Mineral spirits | 64742-88-7 | 1 - 5% |
| Surfactant | 68987-81-5 | < 1.0% |
| Silicone Emulsion | Not Available | < 1.0% |
| Terpene Oils | 68956-56-9 | < 1.0% |

The chemical identity of some or all components is confidential business information (trade secret) and is being withheld as permitted by 29CFR19191200 (i). No other ingredients known to be hazardous.

## SECTION 4 - FIRST AID MEASURES

EYES: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

SKIN: Wash skin surfaces thoroughly after contact. Wash clothing and clean shoes thoroughly before reuse. Get medical attention if irritation develops.

INHALATION: Move exposed person to fresh air. If breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen clothing. Get medical attention immediately.

INGESTION: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

GENERAL: Physicians: No specific treatment. Treat symptomatically. Contact poison treatment specialist if large quantities have been inhaled or ingested.

See Section 11 for exposure symptoms.

## SECTION 5 - FIRE FIGHTING MEASURES

FLAMMABILITY: In a fire or if heated, a pressure increase will occur and the container may burst.

EXTINGUISHING MEDIA: Use an extinguishing agent suitable for the surrounding fire.

PROTECTIVE EQUIPMENT: Fire-fighters should wear appropriate protective equipment and self-contained

breathing apparatus (SCBA) with full face-piece operated in positive pressure mode.

ADDITIONAL INFORMATION: Thermal decomposition products-carbon monoxide, sulfur oxides, metal oxide/oxides, halogenated compounds.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: No action should be taken involving individual risk or without suitable training. Isolate area. Avoid contact with material. Do not breathe vapors. Provide adequate ventilation. Wear proper personal protective equipment.

ENVIRONMENTAL: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform relevant authorities if the product reaches sewers, waterways or soil.

CONTAINMENT/CLEANUP: Stop leak if without risk. Move containers from spill area. Contain or absorb with inert dry material. Dispose of according to local regulations. See Section 1 for emergency contact information and 13 for waste disposal.

## SECTION 7 - HANDLING AND STORAGE

SAFE HANDLING: Wear appropriate personal protective equipment (see Section 8). Eating drinking and smoking should be prohibited. Do not get into eyes or on skin. Do not ingest. Keep containers tightly closed. Do not reuse container.

SAFE STORAGE: Store in accordance with local regulations. Store in original container away from foods, drink and incompatible materials. Keep container tightly closed. Do not store unlabeled. Use appropriate containment.

## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Apply technical measures to comply with occupational exposure limits. Mechanical ventilation, eyewash stations, showers where necessary.

EYE PROTECTION: Safety eye-wear/face shield complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

RESPIRATORY PROTECTION: Use a properly fitted air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates necessity. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product & the safe working limits of the chosen respirator.

HAND PROTECTION: Chemical resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

SKIN PROTECTION: Personal protective equipment for the body should be selected based on the task

being performed and the risks involved and should be approved by a specialist before handling this product.

| COMPONENT | ACGIH TWA ppm | OSHA/NIOSH STEL ppm | OSHA/ACGIH STEL mg/m3 |
|---|---|---|---|
| Sodium Metasilicate Pentahydrate | None | None | None |
| Sodium tripolyphosphate | 10.00 | None | None |
| Alkali Salt | None | None | None |
| Mineral spirits | 100.00 | None | None |
| Surfactant | None | None | None |
| Silicone Emulsion | 10.00 | None | None |
| Terpene Oils | 30.00 | None | None |

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| PHYSICAL STATE: | Powder | UPPER EXPLOSIVE LIMITS: | NA |
| COLOR: | White | LOWER EXPLOSIVE LIMITS: | NA |
| ODOR: | Pine | VAPOR PRESSURE: | NA |
| ODOR THRESHOLD: | NA | VAPOR DENSITY: | NA |
| PH: | 11.5 - 14.0 | RELATIVE DENSITY: | NA |
| MELTING POINT: | NA | SOLUBILITY: | NA |
| FREEZING POINT: | NA | PARTITION COEFFICIENT: | NA |
| BOILING POINT: | NA | AUTO-IGNITION TEMPERATURE: | NA |
| FLASH PT METHOD: | NA | DECOMPOSITION TEMPERATURE: | NA |
| FLASH POINT: | NA | SPECIFIC GRAVITY: | 1.04000 |
| EVAPORATION RATE: | NA | % VOLATILE: | NA |
| FLAMMABILITY: | Nonflammable | VISCOSITY (cst): | NA |

## SECTION 10 - STABILITY AND REACTIVITY

| | |
|---|---|
| REACTIVITY: | HAZARDOUS DECOMPOSITION PRODUCTS |
| CHEMICAL STABILITY: | Stable under normal conditions. |
| POSSIBILITY OF HAZARDOUS REACTIONS: | Non-reactive. |
| CONDITIONS TO AVOID: | Excessive heat or open flame. |
| INCOMPATIBLE MATERIALS: | Avoid contact with acidic materials and strong oxidizers. |

HAZARDOUS DECOMPOSITION PRODUCTS: Under normal conditions, none are known.

## SECTION 11 - TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY: X Inhalation X Absorption X Ingestion

ACUTE EXPOSURE HAZARDS:

EYE CONTACT: Irritation, stinging, redness, burns.

DERMAL: Irritation, burns upon prolonged exposure.

ORAL: Nausea, vomiting.

INHALATION: No expected route of entry. Irritation.

Sodium Metasilicate Pentahydrate (CAS No. 10213-79-3)
Oral LD50: Rat 1152-1349 mg
Sodium tripolyphosphate (CAS No. 7758-29-4)
Oral LD50: 5400mg/kg rat
Alkali Salt (CAS No. 497-19-8)
Oral LD50: 2800mg/kg rat
Dermal LD50: > 2,000 mg/kg (rabbit)
Mineral spirits (CAS No. 64742-88-7)
Oral LD50: greater than 5,000 mg/kg rat
Surfactant (CAS No. 68987-81-5)
Oral LD50: greater than 2,000mg/kg rat
Dermal LD50: greater than 2,000mg/kg rabbit
Terpene Oils (CAS No. 68956-56-9)
Oral LD50: 2000mg/kg, rat

## SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY: No data available.

PERSISTENCE & DEGRADABILITY: No data available.

BIOACCUMULATIVE POTENTIAL: No data available.

MOBILITY IN SOIL: No data available.

OTHER ADVERSE EFFECTS: No data available.

Sodium Metasilicate Pentahydrate (CAS No. 10213-79-3)
Fish LC50: Danio Rerio (Zebra Fish) 210 mg/L 96h
Sodium tripolyphosphate (CAS No. 7758-29-4)
Fish LC50: greater than 100mg/L trout
Crustacean LC50: greater than 1000mg/L 96h daphnia

Alkali Salt (CAS No. 497-19-8)
Fish LC50: 300mg/l 96h, bluegill
Crustacean LC50: 200-227mg/l 48h dapnia
Mineral spirits (CAS No. 64742-88-7)
Fish LC50: 2 mg/L 96H trout
Crustacean LC50: 1 mg/L 48h Daphnia
Surfactant (CAS No. 68987-81-5)
Fish LC50: 1-10mg/L 96h
Crustacean LC50: 1-10mg/L 48h

## SECTION 13 - DISPOSAL CONSIDERATION

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of the product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions. Dispose of container and unused contents in accordance with federal, state and local requirements.

## SECTION 14 - TRANSPORT INFORMATION

DOT (US)

| | |
|---|---|
| UN NUMBER: | NA |
| SHIPPING NAME: | NA |
| TECHNICAL NAME: | NA |
| HAZARD CLASS: | NA |
| PACKAGING GROUP: | NA |

## SECTION 15 - REGULATORY INFORMATION

| SARA 313 COMPONENTS | CAS NO. | % LESS THAN |
|---|---|---|
| Surfactant | 68987-81-5 | < 1.0% |

| CALIFORNIA PROP. 65 COMPONENTS | CAS NO. | % LESS THAN |
|---|---|---|
| Mineral spirits | 64742-88-7 | 1 - 5% |
| Surfactant | 68987-81-5 | < 1.0% |

RTK: MA, PA, NJ
WARNING! This product contains a chemical known to the State of California to cause cancer birth defects or other reproductive harm.
WARNING: THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.
Not listed

Warsaw Chemical HOLDINGS LLC
P.O. BOX 858 • Warsaw, Indiana 46581
800-548-3396 • www.warsaw-chem.com



# SECTION 16 - OTHER INFORMATION

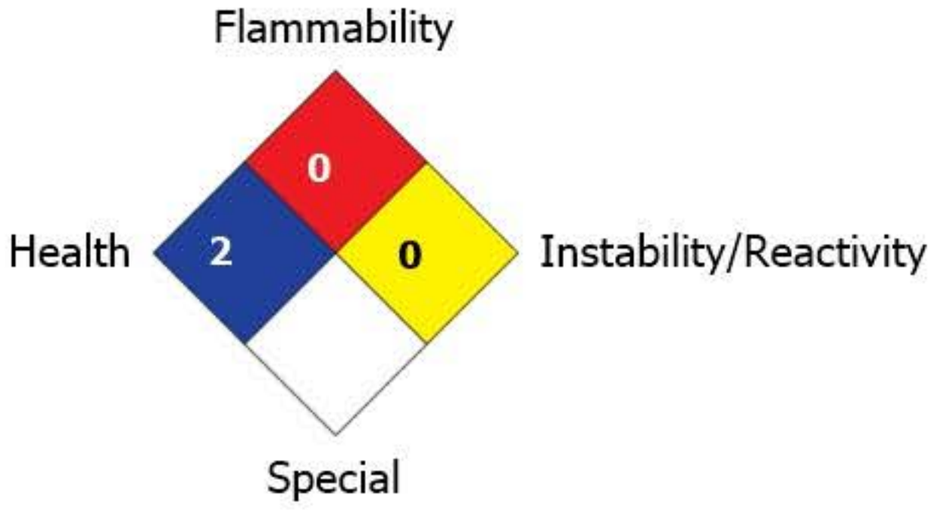
HAZARDOUS MATERIAL INFORMATION SYSTEM (U.S.A.)

| | |
|---|---|
| **Health Hazard** | **2** |
| **Fire Hazard** | **0** |
| **Reactivity** | **0** |
| **Personal Protection** | **C** |

Caution: HMIS ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks and 4 representing significant hazards or risks.

A Safety Glasses
B Safety Glasses, Gloves
C Safety Glasses, Gloves, Apron
D Face Shield, Gloves, Apron
E Safety Glasses, Gloves, Dust Respirator
F Safety Glasses, Gloves, Apron, Dust Respirator
G Safety Glasses, Gloves, Vapor Respirator
H Splash Goggles, Gloves, Apron, Dust & Vapor Respirator
I Safety Glasses, Gloves, Dust & Vapor Respirator
J Splash Goggles, Gloves, Apron, Dust & Vapor Respirator
K Airline Hood or Mask, Gloves, Full Suit, Boots
X Consult your supervisor for special handling directions

NATIONAL FIRE PROTECTION ASSOCIATION (U.S.A.)




NFPA warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health, and reactivity hazards of chemicals.

Information on this form is furnished soley for the purpose of compliance with the Occupational Safety and Health Act of 1970 and shall not be used for any other purpose. Use or dissemination of all or any part of this information can be grounds for legal action.

To the best of our knowledge, the information provided in this Safety Data Sheet is accurate as of the date of its issue. However, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY , EXPRESS OR OTHERWISE. The information this Safety Data Sheet contains is being given to that material when combined with other material(s) or when used otherwise than as described herein.

In all cases, it is the responsibility of the user to determine the applicability of such information and recommendations and the suitability of any product for its own particular purpose. All materials may represent unknown hazards and should be used with caution.

# MINERAL SPIRITS

**MNS**

## CAUTIONARY RESPONSE INFORMATION

| **Common Synonyms** | Watery liquid | Colorless | Gasoline-like odor |
|---|---|---|---|
| Naphtha<br>Petroleum spirits | Floats on water. | | |

Keep people away. Avoid contact with liquid.
Shut off ignition sources and call fire department.
Notify local health and pollution control agencies.

| | |
|---|---|
| **Fire** | Combustible.<br>Extinguish with water, dry chemical, foam, or carbon dioxide.<br>Cool exposed containers with water. |
| **Exposure** | CALL FOR MEDICAL AID.<br><br>LIQUID<br>Irritating to skin and eyes.<br>Harmful if swallowed.<br>Remove contaminated clothing and shoes.<br>Flush affected areas with plenty of water.<br>IF IN EYES, hold eyelids open and flush with plenty of water.<br>IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.<br>DO NOT INDUCE VOMITING. |
| **Water Pollution** | Effect of low concentrations on aquatic life is unknown.<br>Fouling to shoreline.<br>May be dangerous if it enters water intakes.<br>Notify local health and wildlife officials.<br>Notify operators of nearby water intakes. |

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

### 2. CHEMICAL DESIGNATIONS

**2.1 CG Compatibility Group:** 33; Miscellaneous Hydrocarbon Mixtures
**2.2 Formula:** Not applicable
**2.3 IMO/UN Designation:** 3.3/1300
**2.4 DOT ID No.:** 1268
**2.5 CAS Registry No.:** Currently not available
**2.6 NAERG Guide No.:** 128
**2.7 Standard Industrial Trade Classification:** 33429

### 3. HEALTH HAZARDS

**3.1 Personal Protective Equipment:** Plastic gloves; goggles or face shield (as for gasoline).
**3.2 Symptoms Following Exposure:** INHALATION: mild irritation of respiratory tract. ASPIRATION: severe lung irritation and rapidly developing pulmonary edema; central nervous system excitement followed by depression. INGESTION: irritation of stomach.
**3.3 Treatment of Exposure:** INHALATION: remove victim to fresh air. ASPIRATION: enforce bed rest; give oxygen; call a doctor. INGESTION: do NOT induce vomiting; guard against aspiration into lungs. EYES: wash with copious amounts of water. SKIN: wipe off and wash with soap and water.
**3.4 TLV-TWA:** Not listed.
**3.5 TLV-STEL:** Not listed.
**3.6 TLV-Ceiling:** Not listed.
**3.7 Toxicity by Ingestion:** Grade 2; $LD_{50}$ = 0.5 to 5 g/kg
**3.8 Toxicity by Inhalation:** Currently not available.
**3.9 Chronic Toxicity:** Currently not available
**3.10 Vapor (Gas) Irritant Characteristics:** Vapors are nonirritating to the eyes and throat.
**3.11 Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
**3.12 Odor Threshold:** Currently not available
**3.13 IDLH Value:** Not listed.
**3.14 OSHA PEL-TWA:** Not listed.
**3.15 OSHA PEL-STEL:** Not listed.
**3.16 OSHA PEL-Ceiling:** Not listed.
**3.17 EPA AEGL:** Not listed

### 4. FIRE HAZARDS

**4.1 Flash Point:** 105–140°F C.C., depending on grade
**4.2 Flammable Limits in Air:** 0.8%-5.0%
**4.3 Fire Extinguishing Agents:** Foam, carbon dioxide, dry chemical
**4.4 Fire Extinguishing Agents Not to Be Used:** Do not use straight hose water stream.
**4.5 Special Hazards of Combustion Products:** Not pertinent
**4.6 Behavior in Fire:** Not pertinent
**4.7 Auto Ignition Temperature:** 540°F
**4.8 Electrical Hazards:** Not pertinent
**4.9 Burning Rate:** 4 mm/min.
**4.10 Adiabatic Flame Temperature:** Currently not available
**4.11 Stoichometric Air to Fuel Ratio:** Not pertinent.
**4.12 Flame Temperature:** Currently not available
**4.13 Combustion Molar Ratio (Reactant to Product):** Not pertinent.
**4.14 Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

### 5. CHEMICAL REACTIVITY

**5.1 Reactivity with Water:** No reaction
**5.2 Reactivity with Common Materials:** No reaction
**5.3 Stability During Transport:** Stable
**5.4 Neutralizing Agents for Acids and Caustics:** Not pertinent
**5.5 Polymerization:** Not pertinent
**5.6 Inhibitor of Polymerization:** Not pertinent

### 6. WATER POLLUTION

**6.1 Aquatic Toxicity:** Currently not available
**6.2 Waterfowl Toxicity:** Currently not available
**6.3 Biological Oxygen Demand (BOD):** 8%, 5 days
**6.4 Food Chain Concentration Potential:** None
**6.5 GESAMP Hazard Profile:** Not listed

### 7. SHIPPING INFORMATION

**7.1 Grades of Purity:** Various grades available. 70-100% of the materials are derived from petroleum, and 0-30% are aromatic hydrocarbons like benzene and toluene. Flash points vary with the exact composition but are usually above 100°F.
**7.2 Storage Temperature:** Ambient
**7.3 Inert Atmosphere:** No requirement
**7.4 Venting:** Open (flame arrester)
**7.5 IMO Pollution Category:** Currently not available
**7.6 Ship Type:** Currently not available
**7.7 Barge Hull Type:** Currently not available

### 8. HAZARD CLASSIFICATIONS

**8.1 49 CFR Category:** Flammable liquid
**8.2 49 CFR Class:** 3
**8.3 49 CFR Package Group:** III
**8.4 Marine Pollutant:** Yes
**8.5 NFPA Hazard Classification:**

| Category | Classification |
|---|---|
| **Health Hazard (Blue).....** | 0 |
| **Flammability (Red).....** | 2 |
| **Instability (Yellow).....** | 0 |

**8.6 EPA Reportable Quantity:** Not listed.
**8.7 EPA Pollution Category:** Not listed.
**8.8 RCRA Waste Number:** Not listed
**8.9 EPA FWPCA List:** Not listed

### 9. PHYSICAL & CHEMICAL PROPERTIES

**9.1 Physical State at 15° C and 1 atm:** Liquid
**9.2 Molecular Weight:** Not pertinent
**9.3 Boiling Point at 1 atm:** 310–395°F = 154–202°C = 428–475°K
**9.4 Freezing Point:** Not pertinent
**9.5 Critical Temperature:** Not pertinent
**9.6 Critical Pressure:** Not pertinent
**9.7 Specific Gravity:** 0.78 at 20°C (liquid)
**9.8 Liquid Surface Tension:** Currently not available
**9.9 Liquid Water Interfacial Tension:** Currently not available
**9.10 Vapor (Gas) Specific Gravity:** Not pertinent
**9.11 Ratio of Specific Heats of Vapor (Gas):** (est.) 1.030
**9.12 Latent Heat of Vaporization:** Currently not available
**9.13 Heat of Combustion:** Currently not available
**9.14 Heat of Decomposition:** Not pertinent
**9.15 Heat of Solution:** Not pertinent
**9.16 Heat of Polymerization:** Not pertinent
**9.17 Heat of Fusion:** Currently not available
**9.18 Limiting Value:** Currently not available
**9.19 Reid Vapor Pressure:** 0.13 psia

**NOTES**

# MINERAL SPIRITS

MNS

| 9.20 SATURATED LIQUID DENSITY | |
|---|---|
| Temperature (degrees F) | Pounds per cubic foot |
| 50 | 48.690 |
| 52 | 48.690 |
| 54 | 48.690 |
| 56 | 48.690 |
| 58 | 48.690 |
| 60 | 48.690 |
| 62 | 48.690 |
| 64 | 48.690 |
| 66 | 48.690 |
| 68 | 48.690 |
| 70 | 48.690 |
| 72 | 48.690 |
| 74 | 48.690 |
| 76 | 48.690 |
| 78 | 48.690 |
| 80 | 48.690 |
| 82 | 48.690 |
| 84 | 48.690 |
| 86 | 48.690 |
| 88 | 48.690 |
| 90 | 48.690 |
| 92 | 48.690 |
| 94 | 48.690 |
| 96 | 48.690 |
| 98 | 48.690 |
| 100 | 48.690 |

| 9.21 LIQUID HEAT CAPACITY | |
|---|---|
| Temperature (degrees F) | British thermal unit per pound-F |
| 10 | 0.433 |
| 15 | 0.435 |
| 20 | 0.438 |
| 25 | 0.440 |
| 30 | 0.443 |
| 35 | 0.445 |
| 40 | 0.448 |
| 45 | 0.450 |
| 50 | 0.453 |
| 55 | 0.455 |
| 60 | 0.458 |
| 65 | 0.460 |
| 70 | 0.462 |
| 75 | 0.465 |
| 80 | 0.467 |
| 85 | 0.470 |
| 90 | 0.472 |
| 95 | 0.475 |
| 100 | 0.477 |
| 105 | 0.480 |

| 9.22 LIQUID THERMAL CONDUCTIVITY | |
|---|---|
| Temperature (degrees F) | British thermal unit inch per hour-square foot-F |
| 10 | 0.925 |
| 20 | 0.919 |
| 30 | 0.914 |
| 40 | 0.908 |
| 50 | 0.903 |
| 60 | 0.897 |
| 70 | 0.892 |
| 80 | 0.886 |
| 90 | 0.881 |
| 100 | 0.875 |
| 110 | 0.869 |
| 120 | 0.864 |
| 130 | 0.858 |
| 140 | 0.853 |
| 150 | 0.847 |
| 160 | 0.842 |
| 170 | 0.836 |
| 180 | 0.831 |
| 190 | 0.825 |
| 200 | 0.820 |
| 210 | 0.814 |
| 220 | 0.808 |
| 230 | 0.803 |
| 240 | 0.797 |
| 250 | 0.792 |
| 260 | 0.786 |

| 9.23 LIQUID VISCOSITY | |
|---|---|
| Temperature (degrees F) | Centipoise |
| 50 | 9.343 |
| 52 | 8.841 |
| 54 | 8.370 |
| 56 | 7.927 |
| 58 | 7.511 |
| 60 | 7.119 |
| 62 | 6.751 |
| 64 | 6.404 |
| 66 | 6.078 |
| 68 | 5.770 |
| 70 | 5.481 |
| 72 | 5.207 |
| 74 | 4.950 |
| 76 | 4.707 |
| 78 | 4.477 |
| 80 | 4.260 |
| 82 | 4.056 |
| 84 | 3.862 |
| 86 | 3.679 |
| 88 | 3.506 |
| 90 | 3.342 |
| 92 | 3.187 |
| 94 | 3.040 |
| 96 | 2.901 |
| 98 | 2.770 |
| 100 | 2.645 |

| 9.24 SOLUBILITY IN WATER | |
|---|---|
| Temperature (degrees F) | Pounds per 100 pounds of water |
| | INSOLUBLE |

| 9.25 SATURATED VAPOR PRESSURE | |
|---|---|
| Temperature (degrees F) | Pounds per square inch |
| 90 | 0.094 |
| 100 | 0.124 |
| 110 | 0.163 |
| 120 | 0.211 |
| 130 | 0.272 |
| 140 | 0.347 |
| 150 | 0.440 |
| 160 | 0.553 |
| 170 | 0.691 |
| 180 | 0.856 |
| 190 | 1.054 |
| 200 | 1.290 |
| 210 | 1.569 |
| 220 | 1.897 |
| 230 | 2.281 |
| 240 | 2.728 |
| 250 | 3.247 |
| 260 | 3.846 |
| 270 | 4.535 |
| 280 | 5.323 |
| 290 | 6.221 |
| 300 | 7.241 |
| 310 | 8.394 |
| 320 | 9.695 |
| 330 | 11.160 |
| 340 | 12.790 |

| 9.26 SATURATED VAPOR DENSITY | |
|---|---|
| Temperature (degrees F) | Pounds per cubic foot |
| | NOT PERTINENT |

| 9.27 IDEAL GAS HEAT CAPACITY | |
|---|---|
| Temperature (degrees F) | British thermal unit per pound-F |
| | NOT PERTINENT |

THE HOTSY CORPORATION

**Operation and Maintenance Manual**

# Model 7320 Automatic Parts Washer

Distributed By:

REV. AA

## MACHINE IDENTIFICATION TAG

When contacting Hotsy Customer Service, please refer to the machine identification tag above for detailed machine specifications. For your convenience, a copy of this tag is also permanently affixed to the outside wall of the main electrical panel.

The machine identification tag contains important electrical specifications and other information about your machine. This information will enable your Hotsy Customer Service Representative to assist you more easily.

---

Customer Service

***toll free: 1-800-525-1976, ext. 5301***

***e-mail: tech@hotsy.com***

---

# Warranty Registration

**IMPORTANT:** To validate your warranty, please take a moment to complete and return this registration sheet within 10 days of purchase.

For your convenience, you can either mail this sheet to the address printed on the back, or you can fax it to our offices at 303-792-0547.

**PURCHASE DATE**: ___ ___ / ___ ___ / ___ ___ (mm/dd/yy)

| First Name | Last Name | | |
|---|---|---|---|
| Title | | | |
| Company | | | |
| Street Address | | | |
| City | State/Province | Zip/Postal Code | Country |
| Telephone | | Fax | |

| Dealer/Distributor Name | | | |
|---|---|---|---|
| Street Address | | | |
| Street Address | | | |
| City | State/Province | Zip/Postal Code | Country |
| Telephone | | Fax | |

**Model**

- ❑ 7230
- ❑ 7320
- ❑ 7520
- ❑ 7630
- ❑ 7642
- ❑ 7732
- ❑ 7742
- ❑ 7862
- ❑ Other_____

**Electrical Power Source**

- ❑ 120V Single Phase
- ❑ 230V Three Phase
- ❑ 230V Three Phase
- ❑ 460V Three Phase
- ❑ Other_____

| Serial Number of Machine | Serial Number of Pump |
|---|---|
| __ __ __ __ __ __ __ __ __ __ __ __ | __ __ __ __ __ __ __ __ __ __ __ __ |

THE HOTSY CORPORATION

***Thank you for purchasing a HOTSY® Automatic Parts Washer!***

**PLACE POSTAGE HERE**

Post Office will not deliver without postage

***THE HOTSY CORPORATION***

**Customer Service Department**
**21 Inverness Way East**
**Englewood, Colorado 80112**
**U.S.A.**

FOLD ALONG THIS LINE

TAPE HERE (NO STAPLES PLEASE)

THE HOTSY CORPORATION

## Model 7320 Automatic Parts Washer



# *Contents*

**SECTION 4**
## Troubleshooting



**SECTION 5**
## Maintenance and Repair



## Appendix



## One-Year Limited Warranty

SECTION 1

# Introduction and Safety

## USING THIS MANUAL

This manual is intended as a guide for safely assembling, installing, operating, and maintaining the Hotsy Model 7320 Automatic Parts washer.

### Section 2: Installation

Includes all the information you need to initially install the machine and prepare it for operation.

### Section 3: Operation

Includes detailed information about the individual components on the machine, and also provides detailed procedures for starting up the machine, washing parts, and shutting down the machine.

### Section 4: Troubleshooting

Includes problem-specific troubleshooting tips, a block diagram for troubleshooting the electrical panel, and detailed procedures for testing individual components.

### Section 5: Maintenance and Repair

Includes a maintenance schedule and detailed procedures for replacing specific components on the machine.

### Appendix

Includes documentation to support components that are specific to your machine. The documentation includes a comprehensive list of replacement parts, an electrical diagram, a detailed diagram of the main electrical panel, and documentation for any non-standard options and accessories.

**NOTE**

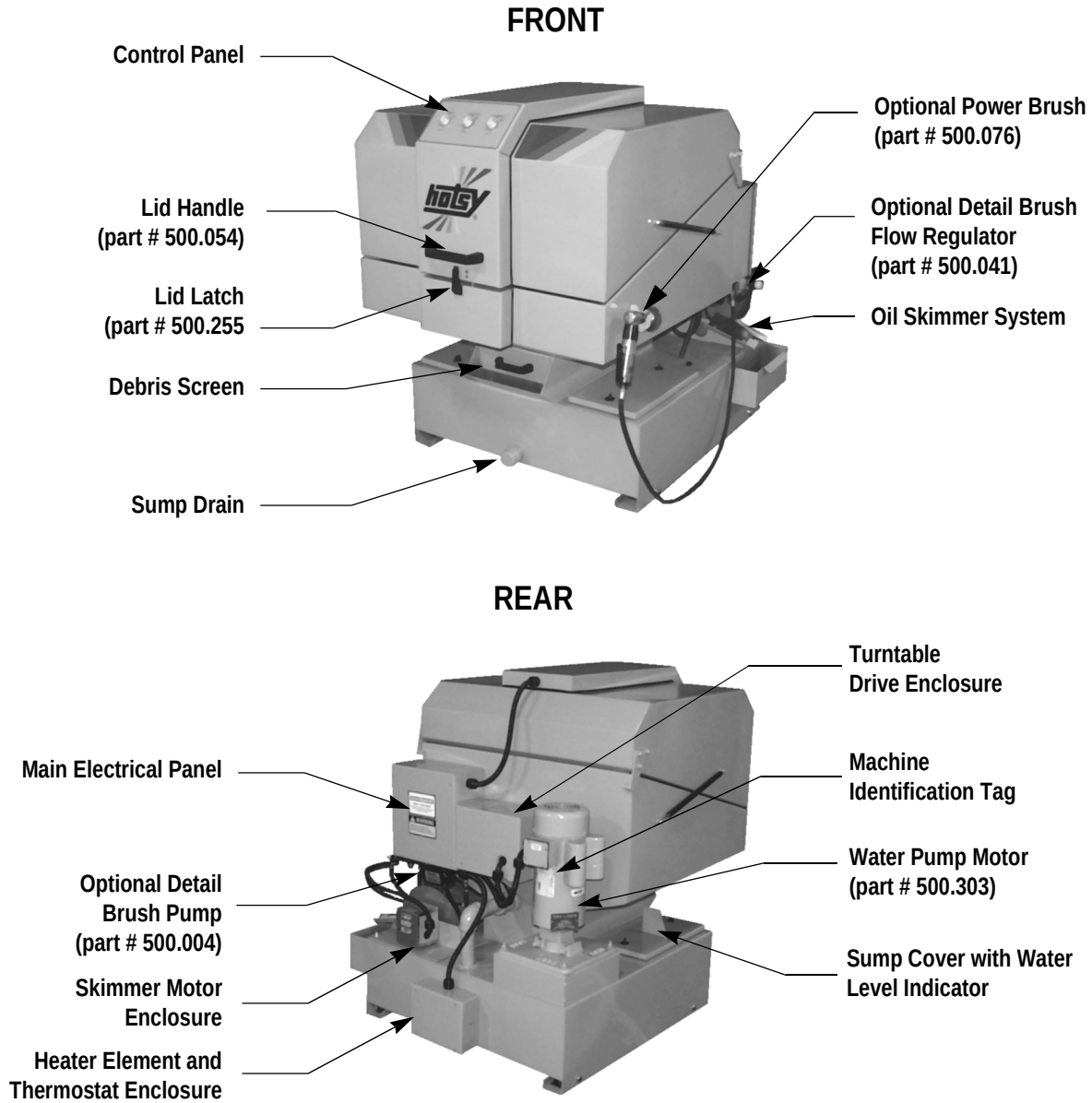
**Ordering Replacement Parts**

Part numbers listed throughout this manual are for a typical Hotsy machine; they may not be the correct parts for your machine. When ordering replacement parts, please refer to the Replacement Parts List in the Appendix for a complete, up-to-date list of replacement parts for your specific machine.

## OVERVIEW OF THE MACHINE

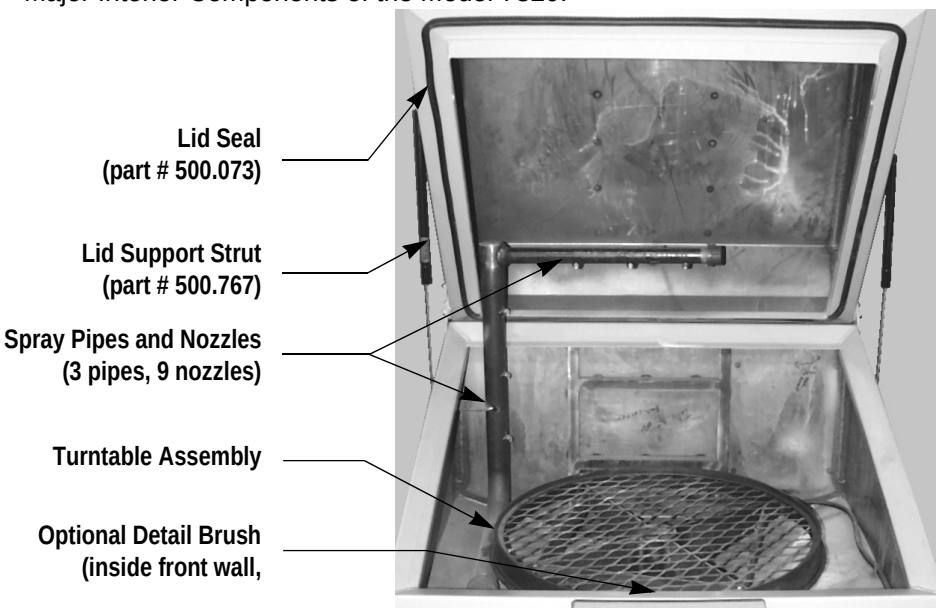
The Hotsy Model 7320 aqueous automatic parts washer is designed to operate safely and efficiently with a minimum of required maintenance. Before you begin to install and use the machine, please familiarize yourself with the major components (see Figures 1-1 and 1-2).

**Figure 1-1:** Major Exterior Components of the Model 7320.




**NOTE: Model 7320 *Deluxe Edition* shown. All options shown are standard features on the *Deluxe Edition*.**

**Figure 1-2:** Major Interior Components of the Model 7320.




## SAFETY

Observe the following safety issues while installing, operating, and maintaining the machine.

### WARNING

**Improper installation could cause serious damage to the machine:**

- The machine must be installed by a licensed professional electrician to insure safe and proper installation.
- The machine can only operate on the type of electrical power indicated on the electrical specifications tag. Operating the machine on any other power supply will permanently damage the motors.

**Electrical shock could cause serious injury or death:**

- Install the machine in compliance with the National Electric Code, connect it to a properly sized lockable disconnect, and ground the machine using the grounding stud inside the main electrical panel.
- While operating the machine, keep all electrical panels in place and securely fastened at all times.
- Disconnect the machine completely from the outside power source before servicing.

**Hot, high-pressure cleaning solution could cause serious injury:**

- Do not operate the machine with the lid in the open position, and do not override the lid safety switch.
- Always wear approved eye protection while operating the machine.
- Always wear rubber gloves when loading and unloading the machine or servicing components in the wash chamber or sump.
- After the machine stops, wait 10 seconds before opening the lid.

**Slips and falls could cause serious injury:**

- Maintain an unobstructed work area around the machine and keep the floor free of water, oil, grease, or other foreign substances.

## NOTES

SECTION

2

# Installation

## BEFORE YOU BEGIN

To prepare to install the machine, choose an unobstructed, level site that allows convenient access for operators and maintenance personnel. Sources for water and electrical power should be located near the installation site. If your machine is equipped with the optional power brush and hand detail brush you must also run a compressed air line to the installation site.

If you have any questions regarding the installation, please contact your distributor or call a Hotsy customer service representative at 1-800-525-1976, ext. 5301. When contacting Hotsy Customer Service please refer to the machine identification tag inside the front cover of this manual for detailed machine specifications.

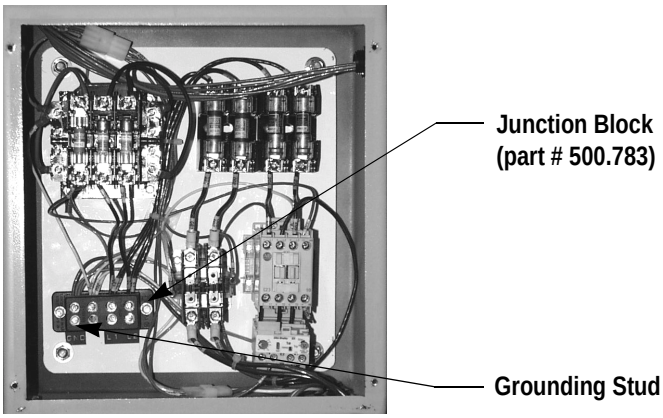
## STEP 1: MAKE ELECTRICAL CONNECTIONS

**NOTE**

**All electrical installation tasks must be performed by a licensed, professional electrician to ensure safe and proper operation.** The installation must comply with the National Electric Code and all applicable state and local codes.

**The machine can only operate on the type of electrical power indicated on the electrical specifications tag**. Read and understand the electrical specifications tag to determine the electrical power requirements before installing the machine.

**Figure 2-1:** Typical Main Electrical Panel.



## STEP 2: CONNECT A COMPRESSED-AIR LINE AND ACCESSORIES

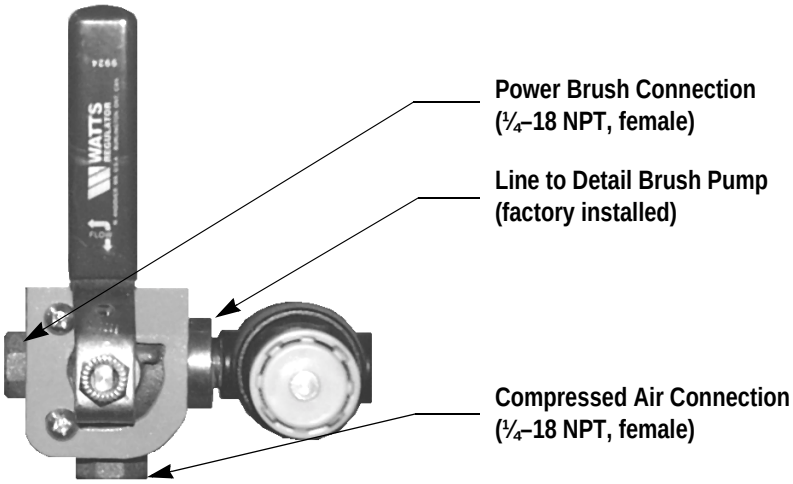
This step is required for machines equipped with the optional power brush and hand detail brush. If your machine does not have these options, skip the following procedure.

**NOTE**

To ensure proper operation and to minimize the possibility of premature component failure, make sure the compressed air is supplied at 75 to 90 psi. Hotsy also recommends an in-line moisture trap and an in-line lubricator on the main air supply line. Refer to the documentation provided with the power brush for more information.

1. Remove the power brush from the box, install the wire brush in the chuck, and connect the air hose.
2. Familiarize yourself with the three-way air flow select valve (see Figure 2-2) then install a fitting to accommodate a connection to your compressed-air supply.

**Figure 2-2:** 3-way Air Flow Select Valve.

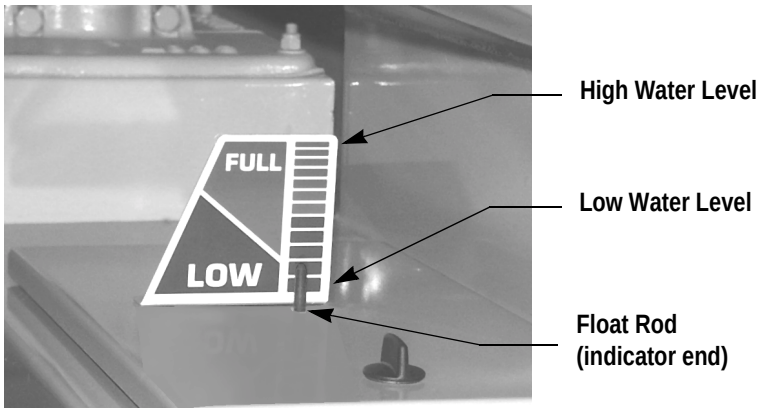



3. Connect the shop compressed-air line to the machine.
4. Connect the hose from the power brush to the air flow select valve.
5. Hang the power brush on the bracket mounted along the right side of the machine.

## STEP 3: FILL THE MACHINE WITH WATER AND ADD DETERGENT

1. Familiarize yourself with the water level indicator on the left sump cover (see Figure 2-3)

**Figure 2-3:** Water Level Indicator.




2. Remove the right sump cover and feed a water hose directly into the sump chamber.
3. Fill the sump with water. The sump capacity is 40 gallons.
4. When the water level indicator indicates that the sump is full, turn off the water.

**NOTE**

**Monitor the water level carefully – do not overfill the machine.** If you overfill the machine, remove excess water using a small submersible pump or a suitable container. The correct water level is two inches from the top of the sump tank when the pump is off.

5. Close and latch the lid.
6. Turn the heater timer to the 2 Hour position. The sump water will reach operating temperature (160 – 180 °F) in approximately one hour.
7. While the sump water is heating, add eight scoops (16 cups) of Hotsy *TubMate All-Purpose Detergent* to the wash chamber. To ensure that the detergent dissolves properly, spread it evenly throughout the wash chamber.

**NOTE**

Hotsy *TubMate All-Purpose Detergent* is the only cleaning agent approved for use with Hotsy automatic parts washers. It is specially formulated with rust inhibitors and anti-foaming agents to optimize performance and minimize maintenance. The use of any other detergent during the warranty period will void the warranty.

8. Close and latch the lid.
9. Turn the wash cycle timer to 30 minutes, and allow the machine to complete the cycle to thoroughly dissolve the detergent into the water.

   When the machine stops (and after the wash water reaches operating temperature), it is ready for use. Refer to *Section 3: Operation* for complete operating instructions.

## NOTES

SECTION 3

# Operation

## MAIN OPERATING COMPONENTS

Familiarize yourself with the main operating components before operating the machine.

## Control Panel

The control panel is located on the front center of the lid and it contains the heater, wash cycle, and oil skimmer timers.

### Heater Control

The heater control is a 12-hour timer switch. It controls the heating element in the sump chamber. The heater control is thermostatically set at the factory to reach a high temperature of 180 °F. The temperature is adjustable using the thermostat (see Figure 5-4 on page 5-5).

### Wash Cycle Control

The wash cycle control is a 60-minute timer switch with a hold feature. When set between 1 and 60 minutes, the timer automatically shuts off the pump and turntable when the wash cycle is complete. When set to **Hold**, the pump and turntable run continuously until manually shut off.

### Oil Skimmer Control

The oil skimmer control is a 30-minute timer switch, and it controls the automatic oil skimmer system.

## Lid Latch and Lid Closure Safety Switch

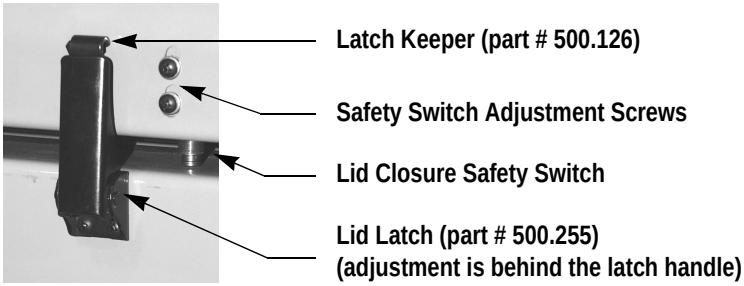
The lid latch and lid closure safety switch are located on the front edge of the cleaning chamber (see Figure 3-1). Together they ensure that the water pump and turntable motor do not operate if the lid is open or unsecured. Both the latch and the safety switch are adjustable.

### Adjusting the Lid Latch and Safety Switch

To adjust the lid latch, use the thumb screw behind the latch handle to tighten or loosen the latch. To adjust the safety switch, loosen the two screws to the right of the lid latch (see Figure 3-1), move the strike plate up or down, then tighten the screws. When properly adjusted, you should hear a slight “click” as the latch compresses the lid seal and the

safety switch.

**Figure 3-1:** Lid Latch and Lid Closure Safety Switch.



## Debris Screen

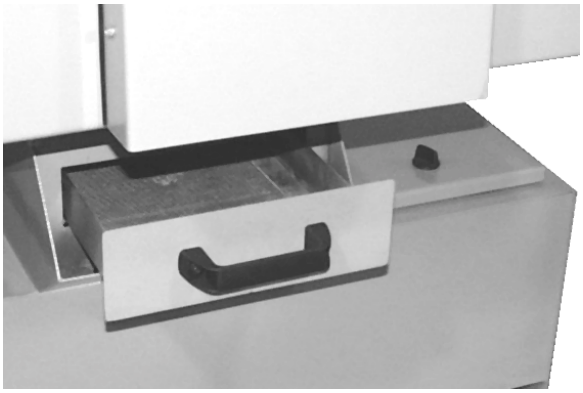
The debris screen is located just below the wash chamber, and is accessible from the front of the machine (see Figure 3-2). The debris screen continuously filters debris particles from the cleaning solution to ensure blockage-free spray nozzle operation, and also provides a safeguard against small parts that might accidentally be washed through from the cleaning chamber.

The frequency at which you must clean the debris screen depends on machine usage. In general, you should clean the screen before operating the machine each day.

**NOTE**

Never operate the machine without the debris screen in place and never remove the screen while the machine is operating. The screen is specially sized to filter particles that could clog the spray nozzles or damage the water pump. Operating the machine without the debris screen in place could cause spray nozzle clogging or water pump failure.

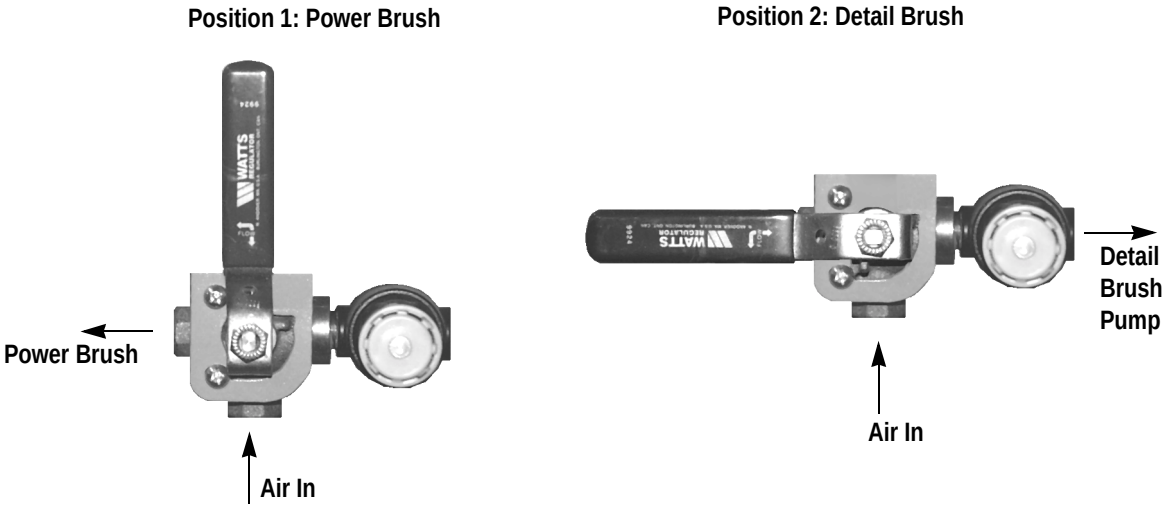
**Figure 3-2:** Debris Screen.



## Air Flow Select Valve (*Deluxe Edition* only)

The air flow select valve is located on the right rear corner of the machine. It is a three-way ball valve that controls the flow of compressed air to the power brush and the hand detail brush (see Figure 3-3).

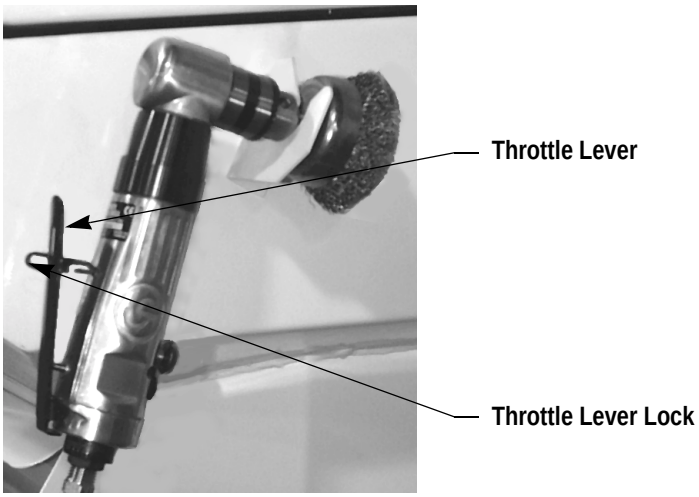
**Figure 3-3:** Air Flow Select Valve Operation.



## Power Brush (*Deluxe Edition* only)

The power brush is located on the right front corner of the machine (see Figure 3-4). Refer to "Step 2: Connect a Compressed-Air Line and Accessories" on page 2-2 for detailed installation information.

**Figure 3-4:** Power Brush.




**NOTE**

The power brush is a standard component on the Model 7320 *Deluxe Edition*. It is available as an option on the base model Model 7320. Contact your Hotsy distributor or call 1-800-525-1976, ext. 5301 to order.

### Using the Power Brush

With stiff stainless steel bristles turning at 1800 RPM, the power brush easily removes carbon deposits, old gasket material, or other tightly-adhered materials from parts before washing.

To turn on the power brush, position the air flow select valve appropriately (see Figure 3-3), then push the power brush lever lock forward with your thumb and squeeze the throttle lever to control the speed of the brush.

**WARNING**

Particles dislodged by the power brush could cause serious injury to your eyes. Always wear approved eye protection when using the power brush.

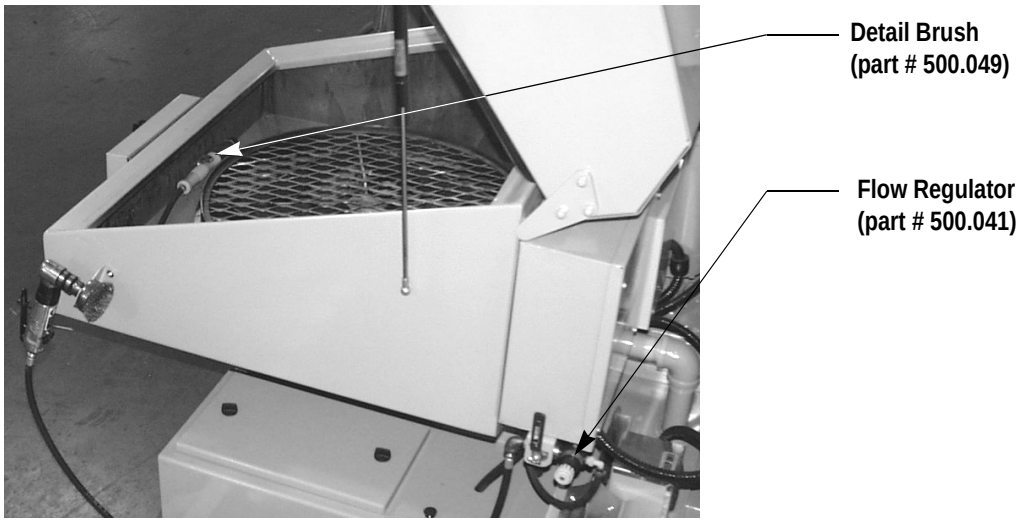
## Detail Brush and Flow Regulator (*Deluxe Edition* only)

The detail brush is located on the front inside wall of the wash chamber. The flow regulator is located on the right rear corner of the machine (see Figure 3-5). The detail brush uses a continuous flow of hot cleaning solution through its nylon bristles to help you clean delicate or lightly soiled parts. The flow regulator controls the flow of cleaning solution through the detail brush.

### Adjusting the Flow of Cleaning Solution

The flow of cleaning solution through the detail brush is pre-set at the factory. If you need to adjust the flow, pull out the flow regulator knob, then rotate it clockwise to decrease the flow or counter-clockwise to increase the flow. After adjusting, puch the knob back in to lock it.

**Figure 3-5:** Detail Brush and Flow Regulator.



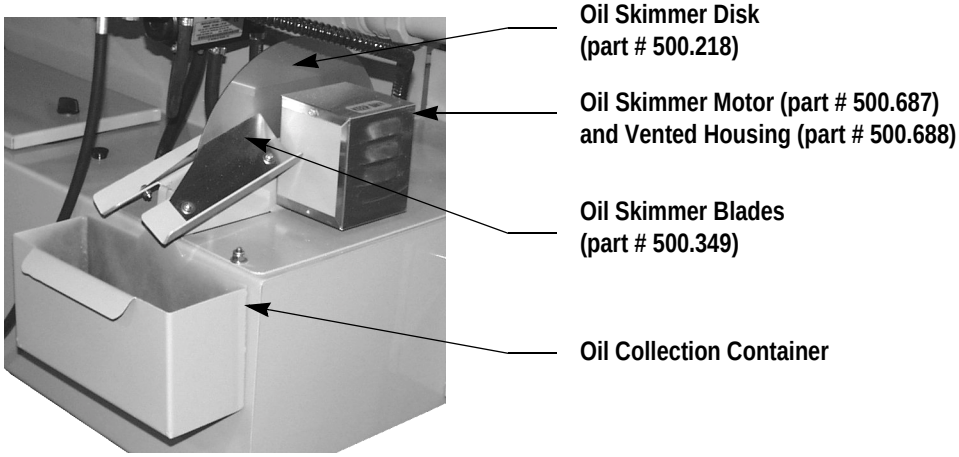

**NOTE**

The detail brush is a standard component on the Model 7320 *Deluxe Edition*. It is available as an option on the base Model 7320. Contact your Hotsy distributor or call 1-800-525-1976, ext. 5301 to order.

## Oil Skimmer System

The oil skimmer system is located on the right rear corner of the machine (see Figure 3-6). It automatically removes oil from the wash solution to prolong its useful life. Refer to "Using the Oil Skimmer System" on page 5-2 for detailed operating instructions.

**Figure 3-6:** Oil Skimmer System.



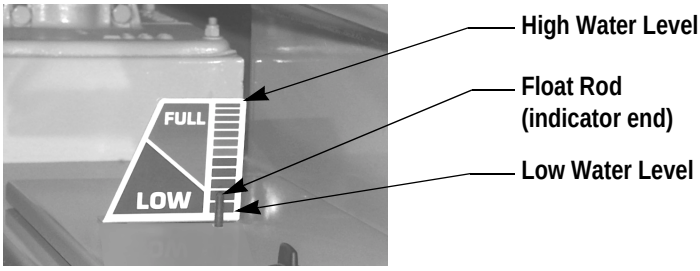
## Water Level Gage

The water level gage is located on the left sump cover (see Figure 3-7). Under typical operating conditions the machine loses 2 – 4 gallons of water per day to evaporation. It is important that you monitor and maintain the water level daily to minimize the risk of burning out the heating element or ruining the pump.

**NOTE**

Water evaporates from the sump chamber, but the detergent does not. It is not necessary to add detergent each time you add water. Only add detergent after you clean the sump chamber each month, or if you notice specific low-detergent indicators (see "Detergent Concentration").

**Figure 3-7:** Water Level Gage.




## Detergent Concentration

Hotsy *TubMate All-Purpose Detergent* is the only detergent approved for use with Hotsy automatic parts washers. It is specially formulated with rust inhibitors and anti-foaming agents to optimize performance and minimize maintenance. The use of any other cleaning agent during the warranty period will void the warranty.

To monitor the relative concentration of the detergent in the wash solution, periodically examine the wash solution in the sump chamber for the following indicators:

- **Rust inside the machine**: not enough detergent
- **Excessive foaming**: not enough detergent
- **Thick, white residue on parts after washing**: too much detergent

To maintain proper detergent concentration under typical operating conditions, add eight scoops (16 cups) to the sump each month after cleaning the sump chamber.

## PREPARING THE MACHINE FOR USE

Before you begin to wash parts, it is important that you properly prepare the machine. Before you begin to use the machine each day:

- check the water level and add water to the sump tank if necessary;
- heat the water to operating temperature;
- add detergent if necessary; (see "Detergent Concentration" on page 3-5)
- verify that none of the spray nozzles are clogged; and
- clean the debris screen.

## WASHING PARTS

The following procedure assumes that the heater is on and the sump water is at operating temperature.

To wash parts, perform the following procedure.

1. Load large, heavy parts directly onto the turntable. Load small, light parts in the small parts basket provided with your machine. Make sure none of the parts extend beyond the edge of the turntable and make sure large, light parts (valve covers, for example) are secured to the turntable.

**NOTE**

For optimum cleaning performance, provide a slight clearance between parts to allow adequate flow of cleaning solution around and between them.

2. Close and latch the lid.
3. Set the wash cycle timer to between 1 and 60 minutes for a timed wash cycle, or set it to **Hold** for a continuous wash.
4. When the machine automatically stops (or after you manually stop the wash cycle), open the lid and wait a few moments to allow the parts to cool and dry before removing them. Most parts will flash-dry in seconds.

## MACHINE SHUT-DOWN

To shut down the machine at the end of the day:

- set the wash cycle timer to **OFF**;
- set the heater timer to **OFF**;
- set the oil skimmer timer to **OFF**;
- shut off the compressed air at the supply line (if installed).

**WARNING**

**If the heater is left on unattended, the water could evaporate and the oil and grease in the wash chamber could catch fire.**

- For periods of extended shut-down, disconnect all power to the machine.
- If your machine is equipped with an optional programmable heater timer, periodically verify the settings to prevent inadvertent unattended operation.

SECTION

4

# Troubleshooting

## OVERVIEW

The following table lists common Model 7320 operation problems and possible solutions. If your machine exhibits problems not listed here, or if the suggested solution does not solve your problem, contact a Hotsy customer service representative at 1-800-525-1976, ext.5301.

| Problem | Possible Cause | Solution |
|---|---|---|
| **Poor cleaning performance** | Parts are obstructing each other | Check the position of parts on turntable; position parts to allow flow of cleaning solution around and between them |
| | Low water level in sump | Check sump water level; add water if necessary (see "Water Level Gage" on page 3-5) |
| | Clogged or improperly aligned spray nozzles | Check spray nozzles for obstructions and alignment; clean and align if necessary (see "Cleaning and Aligning the Spray Nozzles" on page 5-3) |
| | Low detergent concentration | Add 1 – 2 scoops of detergent and observe cleaning performance; add 1 – 2 scoops more if necessary |
| | Wash solution is not properly heated | Check wash solution temperature; it should be between 160 and 180 °F (see *Wash solution not heating*) |
| | Pump is not operating properly | (see *Pump does not operate properly*) |
| **Wash solution not heating**<br><br>NOTE:<br>The desired wash solution temperature is between 160 and 180 °F, and should be achieved within a 1 to 2-hour period from initial start-up. | Blown fuse | Refer to Figure 4-1 to check the electrical panel for a blown fuse |
| | Thermostat is incorrectly set | Check thermostat setting; set to 180 °F (see Figure 4-2 on page 4-5) |
| | Line voltage is too low | Contact a licensed electrician to verify that the line voltage is between 208 and 240 V. |
| | Excess debris is built up around heating element | Check for debris buildup around heating element; clean out if necessary (see "Cleaning out the Sump" on page 5-4) |
| | Failed heater timer | Test the heater timer; replace if necessary (see "Wash Cycle, Heater, and Skimmer Timers" on page 4-5) |
| | Failed thermostat | Test the thermostat; replace if necessary (see "Thermostat" on page 4-6) |
| | Failed heating element | Test the heating element; replace if necessary (see "Heating Element" on page 4-5) |
| **Wash solution too hot** | Thermostat is incorrectly installed | Check the thermostat to ensure that it is correctly installed into the mounting bracket (see "Thermostat" on page 5-6) |
| | Failed thermostat | Replace the thermostat (see "Thermostat" on page 5-6) |

| Problem | Possible Cause | Solution |
|---|---|---|
| **Machine fails to start when "Washing Parts" procedure is followed** | Main power disconnect is off | Verify that no service is being performed on the machine, then turn the main power disconnect on |
| | Lid is not closing properly | Check the lid latch and lid closure safety switch; adjust if necessary (see "Adjusting the Lid Latch and Safety Switch" on page 3-1) |
| | Failed lid closure safety switch | Test the lid closure safety switch; replace if necessary (see "Lid Closure Safety Switch" on page 4-5) |
| | Failed wash cycle timer | Test the wash cycle timer; replace if necessary (see "Wash Cycle, Heater, and Skimmer Timers" on page 4-5) |
| | Pump is not operating properly | (see *Pump does not operate properly*) |
| **Turntable does not turn** | Parts are obstructing turntable rotation | Check for parts obstructing rotation of the turntable; rearrange if necessary |
| | Drive chain is not on the drive pulley | Check drive chain; realign on drive pulley if necessary |
| | Turntable motor compression springs are not installed | Check the turntable motor compression springs; install if necessary (see "Turntable Motor Assembly." on page 5-7) |
| | Blown fuse | Refer to Figure 4-1 to check the electrical panel for a blown fuse |
| | Failed wash cycle timer | Test the electrical panel to eliminate the possibility of a blown fuse (see Figure 4-1) then test the wash cycle timer and replace if necessary (see "Wash Cycle, Heater, and Skimmer Timers" on page 4-5) |
| | Failed start capacitor | Test the electrical panel to eliminate the possibility of a blown fuse (see Figure 4-1) then test the start capacitor and replace if necessary (see "Start Capacitor" on page 4-6) |
| | Failed turntable motor | Test the electrical panel to eliminate the possibility of a blown fuse (see Figure 4-1) then contact a licensed electrician or a Hotsy customer service representative to test the turntable motor |
| **Pump does not operate properly** | Low water level in sump | Check sump water level; add water if necessary (see "Water Level Gage" on page 3-5) |
| | Pump intake is plugged | Check pump intake for obstructions; clean out if necessary |
| | Pump overload relay is tripped | Reset the motor overload relay (see Figure 4-1 on page 4-4) |
| | Blown fuse | Refer to Figure 4-1 to check the electrical panel for a blown fuse |
| | Line voltage is too low | Contact a licensed electrician to verify that the line voltage is between 208 and 240 V. |
| | Pump is failed | Test the electrical panel to eliminate the possibility of a blown fuse (see Figure 4-1) then contact a licensed electrician or a Hotsy customer service representative to test the pump motor |
| **Oil skimmer does not operate properly** | Blown fuse | Refer to Figure 4-1 to check the electrical panel for a blown fuse |

| Problem | Possible Cause | Solution |
|---|---|---|
| **Oil skimmer does not operate properly (*continued*)** | Skimmer blades are too tight | Turn on the skimmer motor and observe the contact between the skimmer blades and the skimmer disk. If the blades skip, bind, or leave a significant scratch on the disk, they are too tight. To loosen the blades, gently bend them away from the skimmer disk |
| | Cooling fan on skimmer motor is jammed | Turn off power to the machine, remove the skimmer motor housing, and ensure that the cooling fan is free of obstructions |
| | Failed skimmer timer | Test the skimmer timer; replace if necessary (see “Wash Cycle, Heater, and Skimmer Timers” on page 4-5) |
| | Failed skimmer motor | Contact a licensed electrician to test the motor; replace if necessary (see |
| **Lid leaks** | Lid latch and lid closure safety switch are not adjusted properly | Check the lid latch and lid closure safety switch; adjust if necessary (see “Adjusting the Lid Latch and Safety Switch” on page 3-1) |
| | Worn lid seal | Check the lid seal; replace if worn |
| **Interior of machine is rusting** | Low detergent concentration or improper detergent usage | Hotsy *TubMate All-Purpose Detergent*, when used at the proper concentration of 8 pounds per 40 gallons of water, contains adequate rust inhibitors to prevent rust. Verify that you are using Hotsy *TubMate All-Purpose Detergent* at the correct concentration (see “Detergent Concentration” on page 3-5) |

## TROUBLESHOOTING THE ELECTRICAL SYSTEM

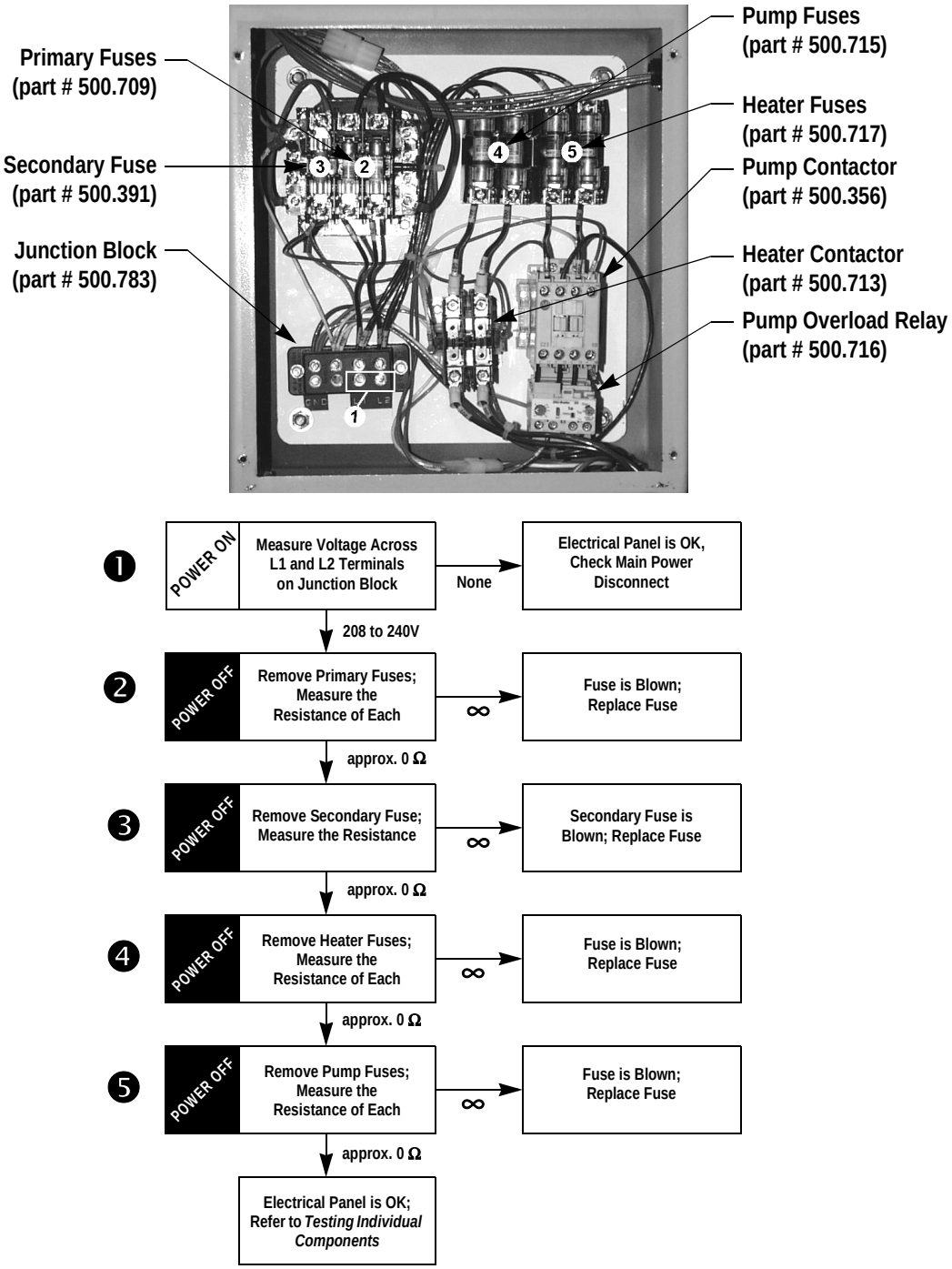
To troubleshoot the electrical system, use Figure 4-1 on page 4-4 to eliminate the possibility of a blown fuse or a bad connection, then refer to “Testing Individual Components” on page 4-5 to determine which component is causing the problem.

**WARNING**

**Electrical shock could cause serious injury or death:**

- Electrical troubleshooting should be performed by qualified personnel only.
- Avoid contact with power leads, terminals, and fuses when power is connected.
- Disconnect power to machine before removing fuses or other electrical components.

**Figure 4-1:** Troubleshooting the Electrical Panel.



## Testing Individual Components

**NOTE**

The following troubleshooting procedures require the use of a volt/ohm meter. If you are not familiar with using a volt/ohm meter do not attempt to perform the following troubleshooting procedures. If you need assistance please contact your distributor or call a Hotsy customer service representative at 1-800-525-1976.

### Wash Cycle, Heater, and Skimmer Timers

1. **Disconnect power to the machine**.
2. Remove the timer from the control panel and disconnect all wires (see "Timers and Switches on the Control Panel" on page 5-11).
3. With the timer in the **OFF** position, test for continuity using an ohm meter.

   If there **is** continuity the timer is no longer funtional; replace the timer.
4. With the timer in the **ON** position, test for continuity using an ohm meter.

   If there **is not** continuity the timer is no longer funtional; replace the timer.

### Lid Closure Safety Switch

1. **Disconnect power to the machine**.
2. Remove the switch from the control panel and disconnect all wires (see "Timers and Switches on the Control Panel" on page 5-11).
3. With the switch fully open (not depressed), test for continuity.

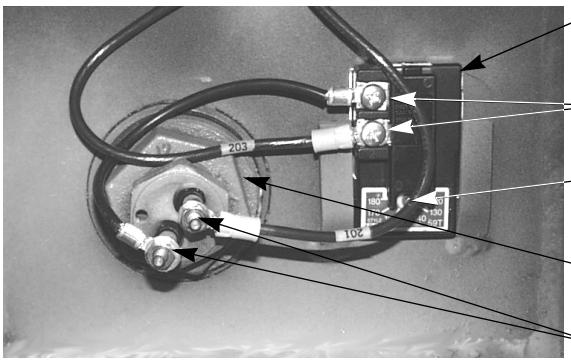
   If there **is** continuity the switch is no longer funtional; replace the switch.
4. With the switch fully closed (depressed), test for continuity.

   If there **is not** continuity the switch is no longer funtional; replace the switch.

### Heating Element

1. **Disconnect power to the machine**.
2. Remove the cover from the heating element and thermostat enclosure (two $^{5}/_{16}$ - inch screws).
3. Detach the two power leads from the heating element (see Figure 4-2).

**Figure 4-2:** Heating Element and Thermostat.

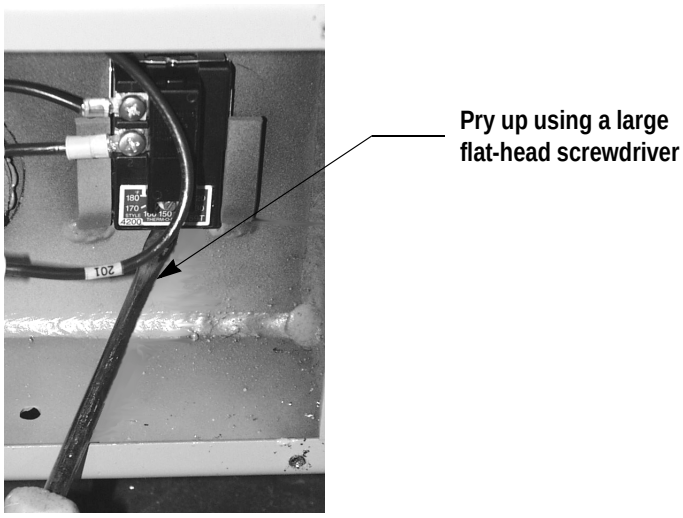


4. Use an ohm meter to measure the resistance of the heating element. The resistance should be approximately 10 Ω; if not, replace the heating element (see “Heating Element” on page 5-5).

### Thermostat

1. **Disconnect power to the machine**.
2. Remove the cover from the heating element and thermostat enclosure (two $^{5}/_{16}$ - inch screws).
3. Detach the two power leads from the thermostat (see Figure 4-2).
4. Using a large flat-head screwdriver, pry the thermostat out of the mounting bracket, then remove it from the machine (see Figure 4-3).

**Figure 4-3:** Removing the Thermostat.




5. Set the thermostat to 120 °F, warm it to just above 120 °F, then test for continuity.

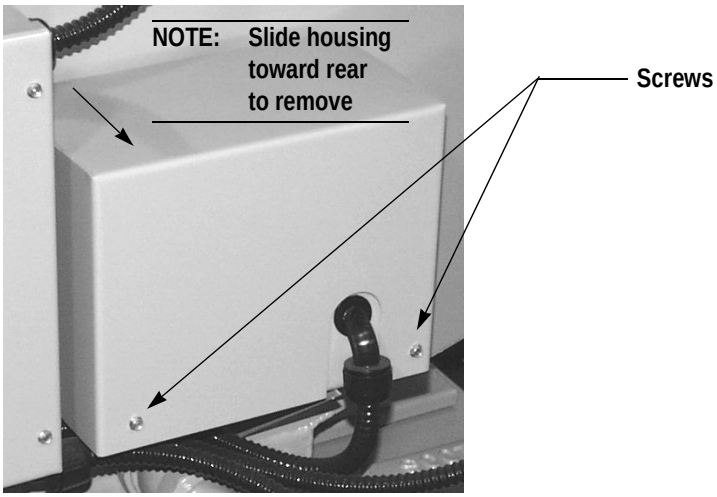
   If there **is** continuity the thermostat is no longer funtional; replace the thermostat.
6. Allow the thermostat to cool to room temperature, then test for continuity.

   If there **is not** continuity the thermostat is no longer funtional; replace the thermostat.

### Start Capacitor

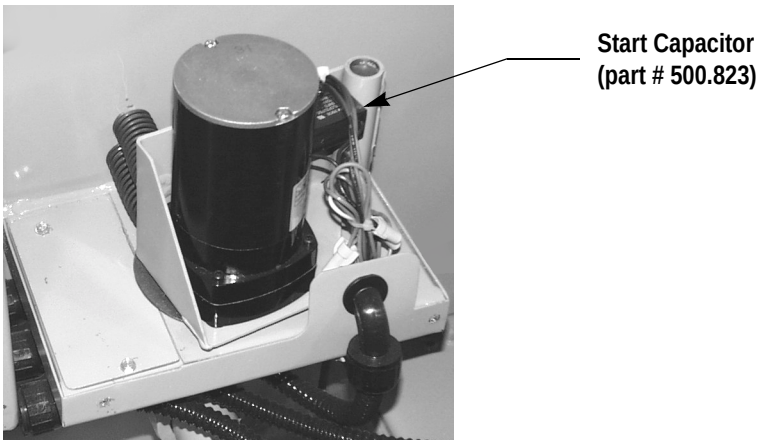
1. **Disconnect power to the machine**.
2. Remove the turntable motor cover (two $^{5}/_{16}$-inch screws, see Figure 4-4).

**Figure 4-4:** Removing the Turntable Motor Cover.




3. Visually inspect the start capacitor (see Figure 4-5). If it appears swollen or deformed, it is no longer funtional; replace the start capacitor.

**Figure 4-5:** Location of the Start Capacitor.




4. If the start capacitor is not visibly failed, remove it from the motor bracket, disconnect the wires, and test it for shorts using an ohm meter.

   If the ohm meter reads approximately 1Ω, the start capacitor is no longer functional; replace the start capacitor.

## NOTES

SECTION

5

# Maintenance and Repair

## MAINTAINING THE MACHINE

To ensure optimum performance and trouble-free operation, observe the following maintenance schedule consistently.

### Daily Maintenance

- Check the water level; add water if necessary.
- Clean the debris screen.

### Weekly Maintenance

- Remove oil from the wash solution using the oils skimmer system (see “Using the Oil Skimmer System” on page 5-2).
- Examine the spray nozzles; clean and align if necessary (see “Cleaning and Aligning the Spray Nozzles” on page 5-3).
- To maintain the integrity of the exterior finish, wipe down the exterior of the machine using a spray degreaser and a soft, damp cloth. TO PREVENT ELECTRICAL COMPONENT FAILURE, DO NOT SPRAY THE MACHINE WITH WATER.

**NOTE**

Spray degreaser and a damp cloth will usually remove all dirt and grime from the machine. For particularly stubborn soap deposits, use a soft cloth dampened with warm solution from the wash chamber.

### Monthly Maintenance

- Drain and clean out the sump chamber (see “Cleaning out the Sump” on page 5-3).

### Semi-Annual Maintenance

- Lubricate the pivot pin on the turntable motor assembly with machine oil or anti-seize (see Figure 5-8 on page 5-8).

## Using the Oil Skimmer System

The Oil Skimmer System is most effective if used when the cleaning solution is cool, and after it has been sitting for at least 30 minutes. The frequency at which you must remove the oil from the wash solution will depend on machine usage. Under typical operating conditions you can expect to remove the oil once each week.

To remove oil from the cleaning solution, perform the following procedure:

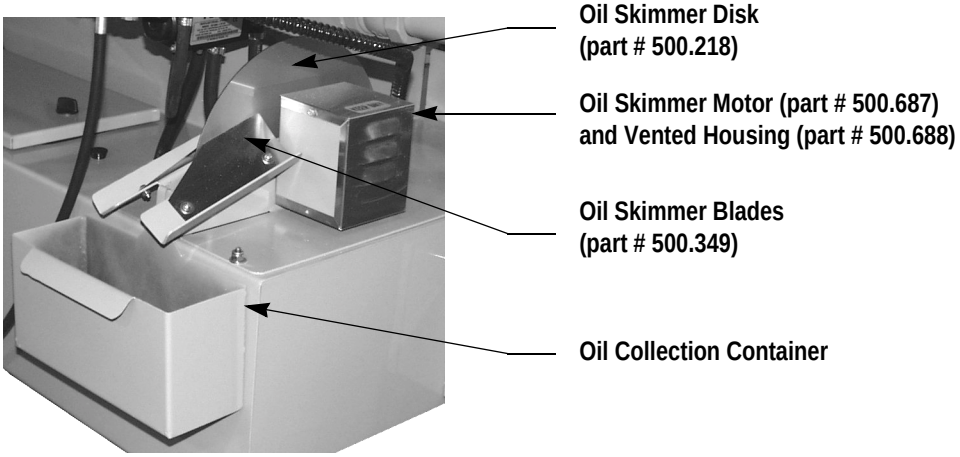
1. Allow the machine to sit idle for at least 30 minutes to allow the oil to float to the surface of the wash solution.
2. Ensure that the oil collection container is in place (see Figure 5-1), then turn the skimmer switch to the 30-minute position.
3. Allow the oil skimmer to operate until it is no longer extrating oil from the cleaning solution.

**TIP**

While extracting oil from the cleaning solution, oil will flow off the wiper blades in a fine continuous stream. Water will flow off the blades in droplets. Once droplets begin to flow off the wiper blades, stop the skimmer motor.

4. When the skimmer motor stops, dispose of the oil in the collection container in accordance with local and state regulations, then replace the container.

**Figure 5-1:** Oil Skimmer System.



## Cleaning and Aligning the Spray Nozzles

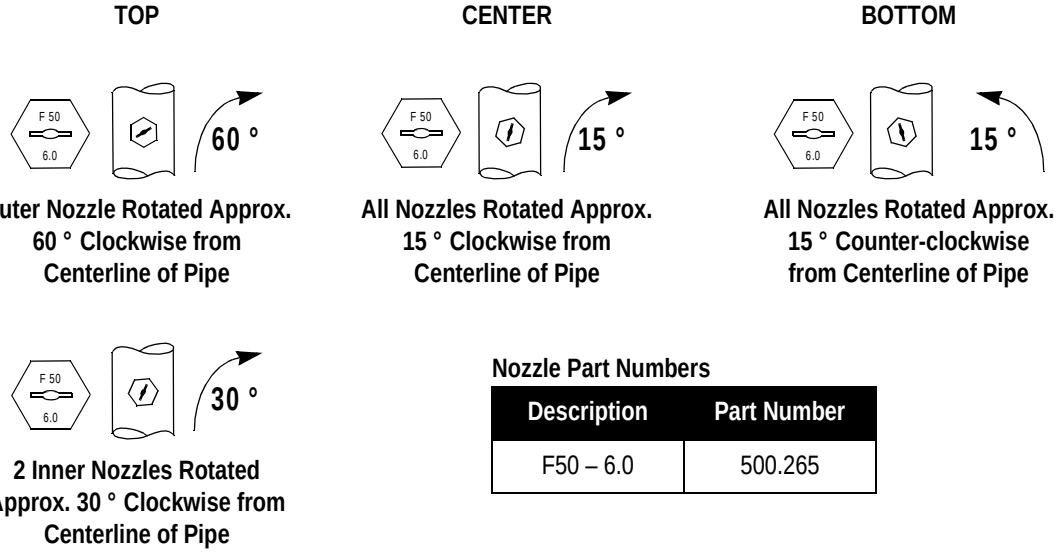
To ensure optimum cleaning performance, it is important that you examine the spray nozzles periodically and clean and align them if necessary.

To clean a plugged nozzle, remove it from the spray pipe and use a small wire brush to free the nozzle of any obstructions. When you replace the nozzle on the spray pipe, make sure you align it according to Figure 5-2 to maintain a proper spray pattern.

**NOTE**

The spray nozzles are positioned to optimize the flow and distribution of cleaning solution in the wash chamber. If you remove the nozzles, make sure you replace them in the correct position on the appropriate pipe. Spray nozzles specifications are stamped on the face of each nozzle, as shown in Figure 5-2.

**Figure 5-2:** Spray Nozzle Location and Alignment.




**Outer Nozzle Rotated Approx. 60 ° Clockwise from Centerline of Pipe**

**All Nozzles Rotated Approx. 15 ° Clockwise from Centerline of Pipe**

**All Nozzles Rotated Approx. 15 ° Counter-clockwise from Centerline of Pipe**

**2 Inner Nozzles Rotated Approx. 30 ° Clockwise from Centerline of Pipe**

**Nozzle Part Numbers**

| Description | Part Number |
|---|---|
| F50 – 6.0 | 500.265 |

## Cleaning out the Sump

1. Remove oil from the cleaning solution using the oil skimmer system (see “Using the Oil Skimmer System” on page 5-2).
2. Remove the turntable and the debris screen. To remove the turntable, slide the chain up from around the perimeter of the turntable, then pull up evenly on the turntable to remove it from the center pin.

**NOTE**

When you remove the chain from the turntable, be sure to maintain some chain tension to ensure that the chain does not disengage from the drive pulley.

3. Drain the wash solution from the sump chamber.

   To drain the solution either use the sump drain or a small submersible pump.

**NOTE**

CUDA recommends that you reuse the wash solution. To do so, transfer it to a suitable holding container (such as a 55-gallon drum) while you clean out the sump chamber.

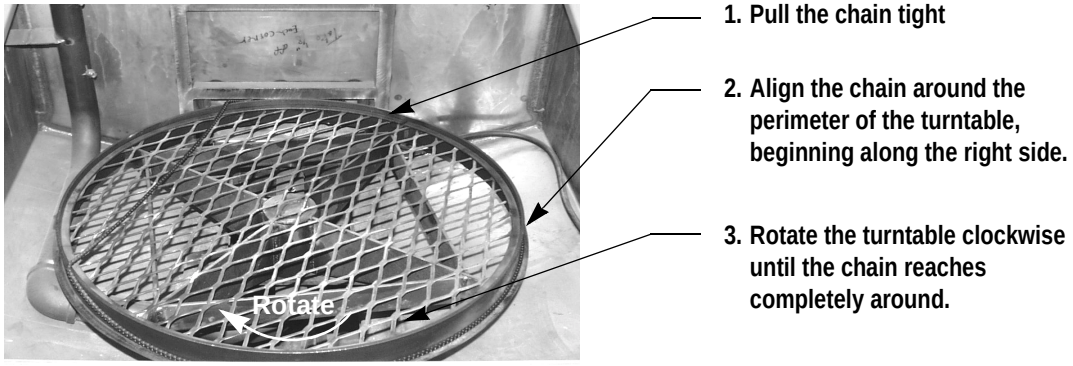
4. Remove sand and other debris from the bottom of the sump chamber. To remove the debris either flush it out through the sump drain, or vacuum it out using a wet/dry vac. Dispose of the debris in accordance with applicable local, state, and federal regulations.

**NOTE**

Take special care to ensure that the heating element is free of debris. A build up of debris around the element will decrease heating performance and may cause the element to overheat and fail.

5. Transfer the wash solution back to the sump chamber, and top it off with fresh water if necessary.
6. Replace the debris screen and turntable. To connect the drive chain to the turntable see Figure 5-3.

**Figure 5-3:** Connecting the Drive Chain to the Turntable.




7. Heat the wash water to operating temperature, then add 8 scoops (16 cups) of Hotsy *TubMate All-Purpose* detergent and run the machine through a 30-minute wash cycle.

# REPAIRING THE MACHINE

The following procedures outline the steps necessary to replace specific items on the machine that could wear out or otherwise fail.

## Heating Element

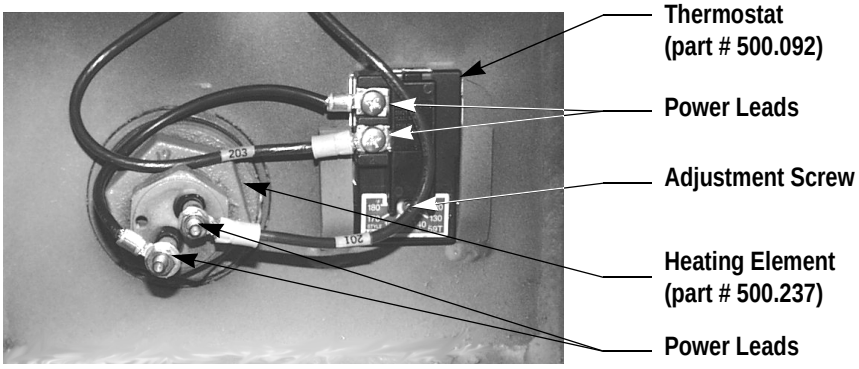
### Required Tools and Equipment

- $^{5}/_{16}$-inch wrench or socket
- 2-inch socket and breaker bar
- sealing tape or compound
- medium phillips-head screwdriver

### Replacement Procedure

1. **Disconnect power to the machine**.
2. Drain the wash solution from the sump.
3. Remove the cover from the heating element and thermostat enclosure (two $^{5}/_{16}$ - inch screws).
4. Detach the two power leads from the heating element (see Figure 5-4).

**Figure 5-4:** Heating Element and Thermostat.




5. Using a 2-inch socket and breaker bar, unscrew the heating element from the machine.

**NOTE**

Since the heating element is in continuous contact with the cleaning solution the threads may corrode slightly. The element may be difficult to remove. When you install a new heating element, use sealing tape or compound on the threads to deter corrosion.

6. Install the new heating element. Installation is the reverse of removal.

# Thermostat

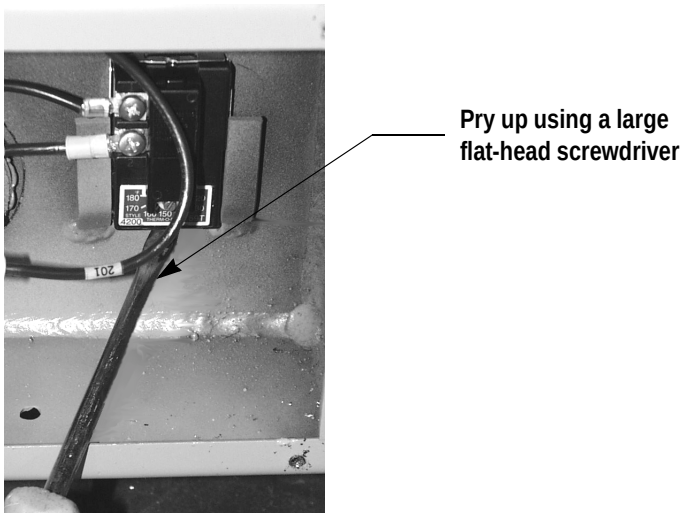
## Required Tools and Equipment

- $^{5}/_{16}$-inch wrench or socket
- medium phillips-head screwdriver
- large flat-head screwdriver

## Replacement Procedure

1. **Disconnect power to the machine**.
2. Remove the cover from the heating element and thermostat enclosure (two $^{5}/_{16}$ - inch screws).
3. Detach the two power leads from the heating element (see Figure 5-4).
4. Using a large flat-head screwdriver, pry the thermostat out of the mounting bracket, then remove it from the machine (see Figure 5-5).

**Figure 5-5:** Removing the Thermostat.




5. Install the new thermostat. Installation is the reverse of removal.

### NOTE

When you install the thermostat make sure you press it firmly into the mounting bracket. In order to operate correctly, the thermostat must be in direct contact with the rear wall of the sump chamber.

# Turntable Motor

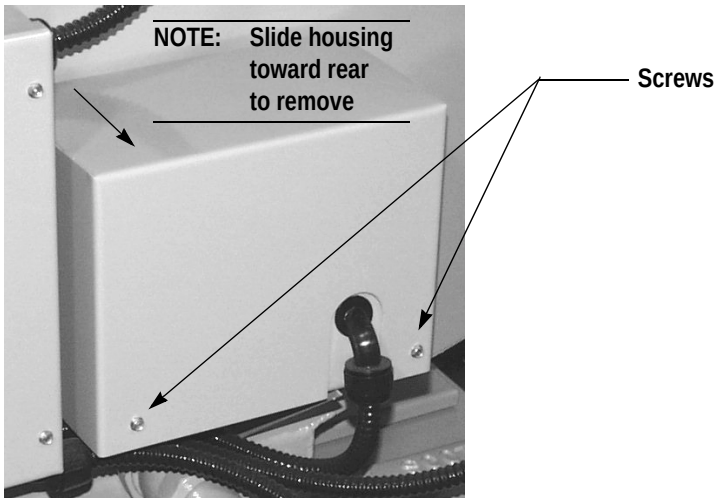
## Required Tools and Equipment

- $^{5}/_{16}$-inch wrench or socket
- $^{3}/_{32}$-inch hex key
- medium phillips-head screwdriver

## Replacement Procedure

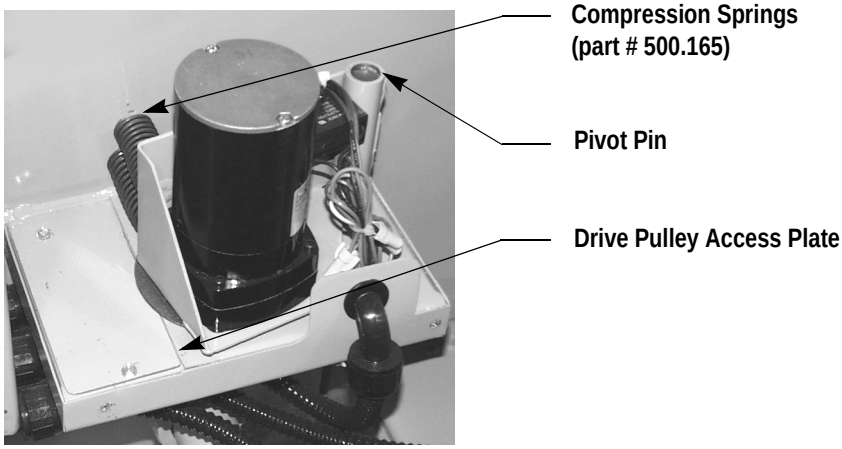
1. **Disconnect power to the machine**.
2. Disconnect the drive chain from the turntable.
3. Taking care not to kink or tangle the chain, place it on the turntable and close the lid.
4. Remove the turntable motor cover (two $^{5}/_{16}$-inch screws, see Figure 5-6).

**Figure 5-6:** Removing the Turntable Motor Cover.




5. Remove the tension springs between the motor and the rear wall of the wash chamber (see Figure 5-7).
6. Remove the drive pulley access plate (two $^{5}/_{16}$ - inch screws, see Figure 5-7).

**Figure 5-7:** Turntable Motor Assembly.



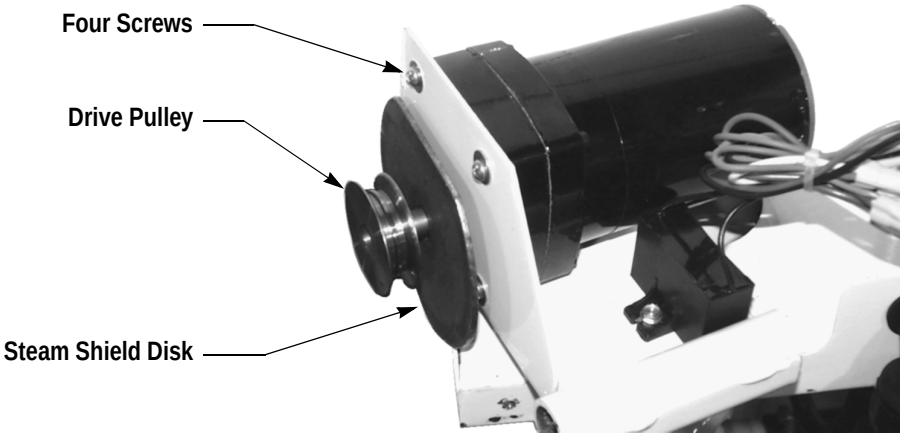
7. Disconnect all power leads from the motor, taking care to mark them for reassembly.
8. Raise the motor and bracket to remove the assembly from the pivot pin (see Figure 5-7).

**NOTE**

You may have to reach into the drive pulley access hole with your fingers to free the chain from the drive pulley.

9. Use a $^{1}/_{8}$-inch hex key to remove the pulley and steam shield disk from the drive motor shaft, then remove the four screws holding the motor to the mounting bracket (see Figure 5-8 on page 5-8).

**Figure 5-8:** Removing the Drive Motor from the Mounting Bracket.




10. Install the new motor. Installation is the reverse of removal.

## Timers and Switches on the Control Panel

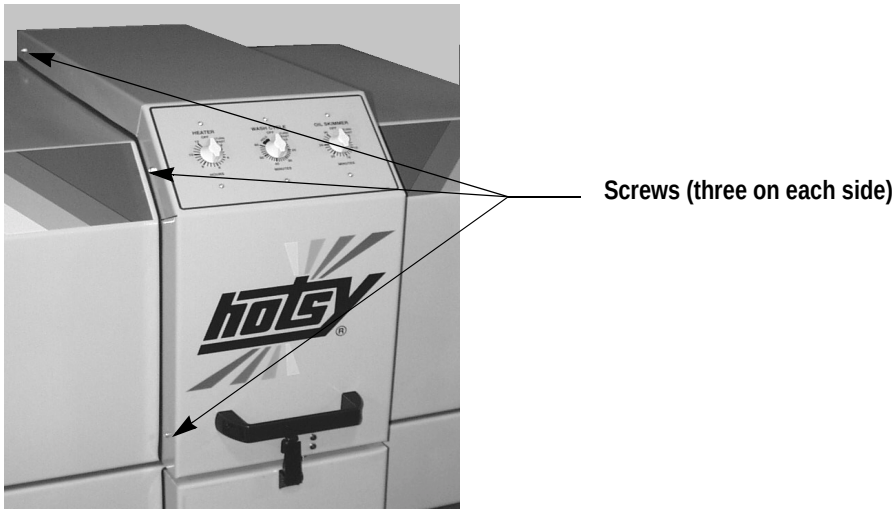
### Required Tools and Equipment

- $^{5}/_{16}$-inch wrench or socket
- ½-inch wrench or deep socket
- small phillips-head screwdriver
- small flat-head screwdriver

### Replacement Procedure

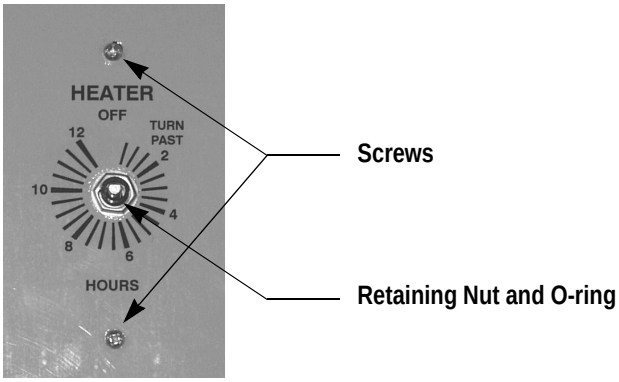
1. **Disconnect power to the machine**.
2. Loosen the compression fitting on the back of the lid to allow enough slack in the wires to access the rear of the control panel when you remove it.
3. Remove the six $^{5}/_{16}$-inch screws that hold the control panel to the lid (see Figure 5-9).

**Figure 5-9:** Removing the Control Panel.




4. Remove the two screws, retaining nut, and o-ring that hold the timer switch to the control panel (see Figure 5-10).

**Figure 5-10:** Removing a Timer.




5. Pull the control panel away from the lid. From the rear of the panel remove the component you wish to replace.
6. Attach the power leads to the new component, then reassemble the control panel and replace it on the machine. Installation is the reverse of removal.

## Skimmer Motor

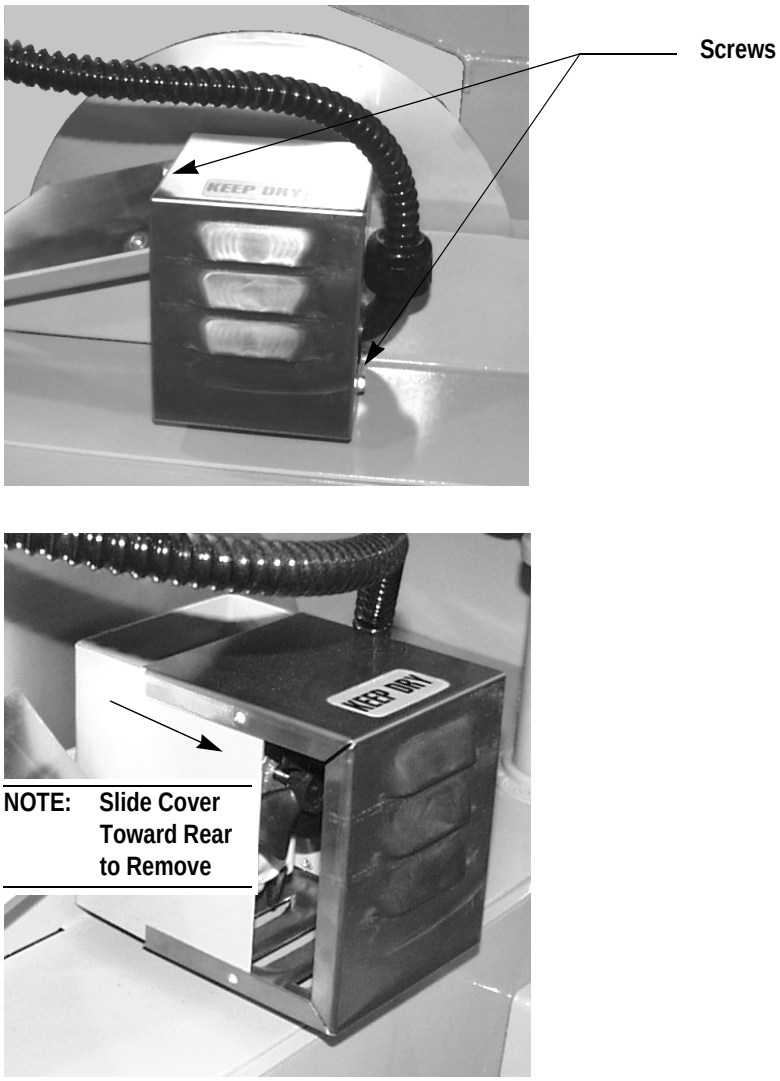
### Required Tools and Equipment

- $^{5}/_{16}$-inch wrench or socket
- ½-inch wrench or socket
- small phillips-head screwdriver

### Replacement Procedure

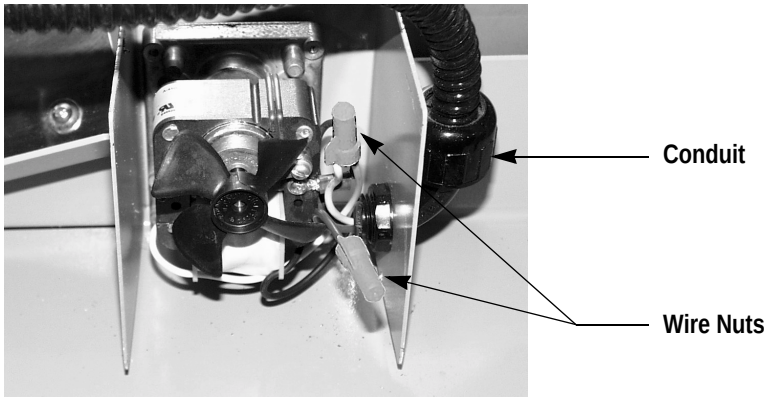
1. **Disconnect power to the machine**.
2. Remove two $^{5}/_{16}$-inch screws to remove the skimmer motor cover (see Figure 5-11).

**Figure 5-11:** Skimmer Motor Cover.



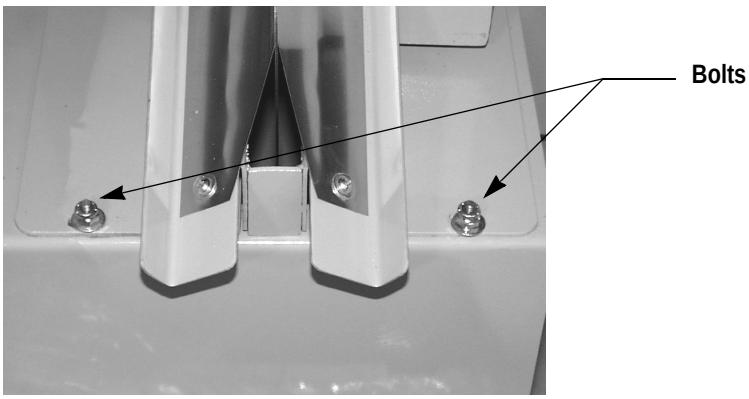
3. Remove the two wire nuts from the power leads to disconnect the leads from the motor, and disconnect the conduit from the motor housing (see Figure 5-12).

**Figure 5-12:** Skimmer Motor Power Leads.



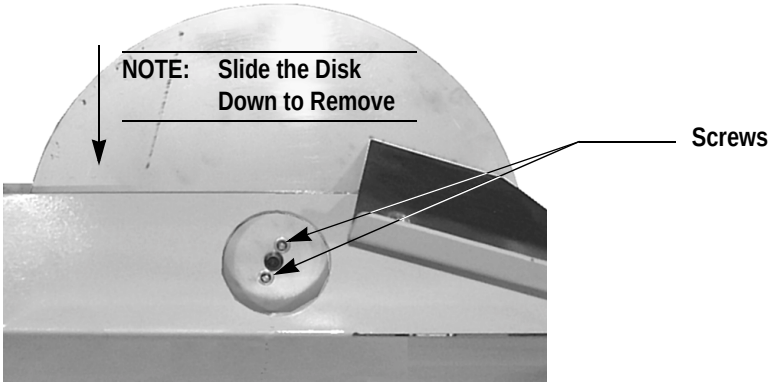

4. Remove the two ½-inch bolts from the skimmer assembly mounting plate to remove the skimmer assembly from the machine (see Figure 5-13).

**Figure 5-13:** Removing the Skimmer Assembly from the Machine.



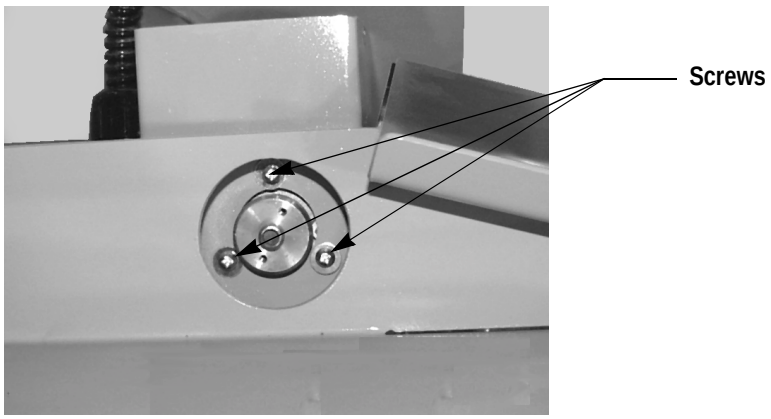

5. Remove the two screws from the center of the skimmer disk to detach the disk from the skimmer assembly (see Figure 5-14). To Remove the disk, disengage it from the center pin then slide it down.

**Figure 5-14:** Removing the Skimmer Disk from the Skimmer Assembly.



6. Remove the three screws from the skimmer motor mounting plate to remove the motor from the skimmer assembly (see Figure 5-15).

**Figure 5-15:** Removing the Skimmer Motor from the Skimmer Assembly.




7. Reassemble the skimmer assembly and replace it on the machine. Assembly is the reverse of removal.

# *Appendix*

## OVERVIEW

This appendix includes documentation to support components that are specific to your machine. The documentation includes a comprehensive list of replacement parts, an electrical diagram, a detailed diagram of the main electrical panel, and documentation for all non-standard options and accessories.

THE HOTSY CORPORATION

# One-Year Limited Warranty

Hotsy products are warranted by the Hotsy Corporation to be free of defects in material and workmanship under normal use, for a period of ONE YEAR from the date of the original purchase. Items that fail due to normal wear such as hoses, pH probes, seals, etc. or damage resulting from neglect, abuse, tampering, or modification are not covered under this warranty. All defects must be verified by an authorized Hotsy service location. (Some components carry the original manufacturer's warranty in lieu of the standard Hotsy warranty. Any warranty claim for these items will be processed through the original manufacturer and the results passed on accordingly.)

### Limitation Of Liability

To the extent allowable under applicable law, Hotsy liability for consequential and incidental damages is expressly disclaimed. Hotsy liability in all events is limited to, and shall not exceed, the purchase price paid for the equipment. Hotsy liability excludes field labor charges and is limited to repair or replacement of defective parts only, at the option of the Hotsy Corporation.

### Warranty Disclaimer

Hotsy has made a diligent effort to illustrate and describe the product in this literature accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the product is merchantable, or fits a particular purpose, or that the product will necessarily conform to the illustrations or descriptions.

### Product Suitability

Many states and locations have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While attempts to assure that its products comply with such code, Hotsy cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, please review the product application, and national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

### Prompt Disposition

Hotsy will make a good faith effort for prompt correction or other adjustments with respect to any product that proves to be defective within limited warranty. For any product believed to be defective within limited warranty, contact the dealer from which the product was purchased. The dealer will give additional directions. If you are unable to resolve the matter satisfactorily, write to Hotsy at the address below. Provide the dealer's name, address, date of purchase, model, serial number, BOM number, and describe the nature of the defect. If the product was damaged in transit to you, file a claim with the freight carrier.

The Hotsy Corporation
21 Inverness Way East
Englewood, Colorado 80112
1-800-525-1976 ext. 5301

# Index

Consumers Energy
Count on Us®

December 2, 2021

Mr. Chris Hare, District Supervisor
**Michigan Department of Environment, Great Lakes, and Energy**
**Bay City District Office - Air Quality Division**
401 Ketchum Street, Suite B
Bay City, MI 48708

RE: Consumers Energy Company, Muskegon River Compressor Station (SRN N2901)
Rule 215(1) Notification of Change
MI-ROP-N2901-2020

Dear Mr. Hare,

Please find enclosed the C-001: Certification and M-001: Rule 215 Change Notification forms for Consumers Energy's Muskegon River Compressor Station (SRN N2901). The notification is being submitted to remove six (6) engines, identified as EUENGINE306, EUENGINE316, EUENGINE319, EUENGINE320, EUENGINE3-1 and EUENGINE3-2, from MI-ROP-N2901-2020. All of the engines have been disconnected from the fuel gas system and are retired.

If you have any questions, please feel free to contact me at AMY.KAPUGA@CMSENERGY.COM or 517-788-2201.

Sincerely,

Amy D. Kapuga

Amy D. Kapuga, P.E.
Senior Environmental Engineer

cc: USEPA, Air and Radiation Division
Parish Geers, Field Leader-Muskegon River Compressor Station
Janet Simon, Sr. Field Leader
Avelock Robinson, Director Gas Operations (cover letter only)
Muskegon River Periodic Reports file

**Consumers Energy**
1945 W. Parnall Road
Jackson, MI 49201
www.consumersenergy.com

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 N2901 |
|---|---|

| Stationary Source Name<br>Consumers Energy Company - Muskegon River Compressor Station | |
|---|---|
| City<br>Marion | County<br>Clare |

## 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 _____

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>Amy Kapuga | Title<br>Sr. Environmental Engineer |
|---|---|
| Phone number<br>517-788-2201 | E-mail address<br>amy.kapuga@cmsenergy.com |

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

| Responsible Official Name<br>Avelock Robinson | | | Title<br>Director-Gas Compression Operations | |
|---|---|---|---|---|
| Mailing address<br>Consumers Energy - St. Clair Compressor Station | | | | |
| City<br>10021 Marine City Highway | State<br>MI | ZIP Code<br>48023 | County<br>St. Clair | 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.**

avelock robinson — Signature of Responsible Official

11/30/2021 — Date

EGLE

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

# RENEWABLE OPERATING PERMIT
# M-001: RULE 215 CHANGE NOTIFICATION
# RULE 216 AMENDMENT/MODIFICATION APPLICATION

*This information is required by Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, 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.*

| | | |
|---|---|---|
| 1. SRN N2901 | 2. ROP Number MI-ROP-N2901-2020 | 3. County Clare |
| 4. Stationary Source Name | Consumers Energy Company - Muskegon River Compressor Station | |
| 5. Location Address | 8613 Pine Road | 6. City Marion |

7. Submittal Type - *The submittal must meet the criteria for the box checked below. Check only one box. Attach a mark-up of the affected ROP pages for applications for Rule 216 changes.*

- ☒ **Rule 215(1) Notification of change.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(2) Notification of change.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(3) Notification of change.** *Complete Items 8 – 11 and 14*
- ☐ **Rule 215(5) Notification of change.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(i)-(iv) Administrative Amendment.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(v) Administrative Amendment.** *Complete Items 8 – 14. Results of testing, monitoring & recordkeeping must be submitted. See detailed instructions.*
- ☐ **Rule 216(2) Minor Modification.** *Complete Items 8 – 12 and 14*
- ☐ **Rule 216(3) Significant Modification.** *Complete Items 8 – 12 and 14, and provide any additional information needed on ROP application forms. See detailed instructions.*
- ☐ **Rule 216(4) State-Only Modification.** *Complete Items 8 – 12 and 14*

8. Effective date of the change. (MM/DD/YYYY) *See detailed instructions.* 9/22/2020

9. Change in emissions? ☐ Yes ☒ No

10. Description of Change - *Describe any changes or additions to the ROP, including any changes in emissions and/or pollutants that will occur. If additional space is needed, complete an Additional Information form (AI-001).*

EUENGINE306, EUENGINE316, EUENGINE319, EUENGINE320, EUENGINE3-1 and EUENGINE3-2 (part of FGCOMPRESSORS) were all disconnected from the fuel gas system (retired in-place) as of 9/20/2020 and should be removed from the ROP.

11. New Source Review Permit(s) to Install (PTI) associated with this application? ☐ Yes ☐ No

If Yes, enter the PTI Number(s) ____-____ ____-____ ____-____ ____-____ ____-____

12. Compliance Status - *A narrative compliance plan, including a schedule for compliance, must be submitted using an AI-001 if any of the following are checked No.*

a. Is the change identified above in compliance with the associated applicable requirement(s)? ☐ Yes ☐ No

b. Will the change identified above continue to be in compliance with the associated applicable requirement(s)? ☐ Yes ☐ No

c. If the change includes a future applicable requirement(s), will timely compliance be achieved? ☐ Yes ☐ No

13. Operator's Additional Information ID - *Create an Additional Information (AI) ID for the associated AI-001 form used to provide supplemental information.* **AI**

| 14. Contact Name | Telephone No. | E-mail Address |
|---|---|---|
| Amy Kapuga | 517-788-2201 | amy.kapuga@cmsenergy.com |

15. This submittal also updates the ROP renewal application submitted on ____/____/____ ☐ Yes ☒ N/A
*(If yes, a mark-up of the affected pages of the ROP must be attached.)*

**NOTE: A CERTIFICATION FORM (C-001) SIGNED BY A RESPONSIBLE OFFICIAL MUST ACCOMPANY ALL SUBMITTALS**

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: N2901 | Section Number (if applicable): |
|---|---|

1. Additional Information ID
**AI-**PARTF

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

Copy of Rule 215(3) "Off-Permit" Change, dated 1/31/2023, to incorporate the requirement of PTI 16-21A

Consumers Energy
Count on Us®

January 31, 2023

Mr. Chris Hare, District Supervisor
**Michigan Department of Environment, Great Lakes, and Energy**
**Bay City District Office - Air Quality Division**
401 Ketchum Street, Suite B
Bay City, MI 48708

RE: Consumers Energy Company, Muskegon River Compressor Station (SRN N2901)

Dear Mr. Hare,

Please find enclosed a C-001 form, M-001 form, and required backup information for the Consumers Energy Company-Muskegon River Compressor Station (MI-ROP-N2901-2020). We are submitting an "Off-Permit" change, pursuant to Rule 215(3), to incorporate the requirements of PTI 16-21A for a natural gas-fired Solar Taurus 70 turbine (EUTURBINE2-2). The turbine is equipped with dry low-NOx combustion control (SoLoNOx). A copy of PTI 16-21A is included with this notification.

If you have any questions, please feel free to contact me at AMY.KAPUGA@CMSENERGY.com or 517-788-2201.

Sincerely,

Amy D. Kapuga

Amy D. Kapuga, P.E.
Senior Environmental Engineer

cc: USEPA, Air and Radiation Division
Dawn Biering, Field Leader-Muskegon River Compressor Station
Janet Simon, Manager Compression
Avelock Robinson, Director Gas Operations (cover letter only)
Muskegon River ROP file

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 N2901 |
|---|---|

| Stationary Source Name<br>Consumers Energy Company - Muskegon River Compressor Station | |
|---|---|
| City<br>Marion | County<br>Clare |

## 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 _____

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>Amy Kapuga | Title<br>Sr. Environmental Engineer |
|---|---|
| Phone number<br>517-788-2201 | E-mail address<br>AMY.KAPUGA@CMSENERGY.COM |

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

| Responsible Official Name<br>Avelock Robinson | | | Title<br>Director, Gas Compression Operations | |
|---|---|---|---|---|
| Mailing address<br>10021 Marine City Highway | | | | |
| City<br>Ira Township | State<br>MI | ZIP Code<br>48023 | County<br>St. Clair | 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.**

avelock Robinson Digitally signed by avelock Robinson
Date: 2023.01.27 15:07:17 -05'00'

Signature of Responsible Official Date

EGLE

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

# RENEWABLE OPERATING PERMIT
# M-001: RULE 215 CHANGE NOTIFICATION
# RULE 216 AMENDMENT/MODIFICATION APPLICATION

*This information is required by Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, 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.*

| 1. SRN N2901 | 2. ROP Number MI-ROP-N2901-2020 | 3. County Clare |
|---|---|---|
| 4. Stationary Source Name | Consumers Enegy Company - Muskegon River Compressor station | |
| 5. Location Address | 8613 Pine Road | 6. City Marion |

7. Submittal Type - *The submittal must meet the criteria for the box checked below. Check only one box. Attach a mark-up of the affected ROP pages for applications for Rule 216 changes.*

- ☐ **Rule 215(1) Notification of change.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(2) Notification of change.** *Complete Items 8 – 10 and 14*
- ☒ **Rule 215(3) Notification of change.** *Complete Items 8 – 11 and 14*
- ☐ **Rule 215(5) Notification of change.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(i)-(iv) Administrative Amendment.** *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(v) Administrative Amendment.** *Complete Items 8 – 14. Results of testing, monitoring & recordkeeping must be submitted. See detailed instructions.*
- ☐ **Rule 216(2) Minor Modification.** *Complete Items 8 – 12 and 14*
- ☐ **Rule 216(3) Significant Modification.** *Complete Items 8 – 12 and 14, and provide any additional information needed on ROP application forms. See detailed instructions.*
- ☐ **Rule 216(4) State-Only Modification.** *Complete Items 8 – 12 and 14*

8. Effective date of the change. (MM/DD/YYYY) *See detailed instructions.* 12/23/2022

9. Change in emissions? ☒ Yes ☐ No

10. Description of Change - *Describe any changes or additions to the ROP, including any changes in emissions and/or pollutants that will occur. If additional space is needed, complete an Additional Information form (AI-001).*

Roll in requirements of PTI 16-21A, for the installation of a natural gas-fired Solar Taurus 70 turbine (EUTURBINE2-2). The turbine is equipped with dry low-NOx combustion control (SoLoNOx). A copy of PTI 16-21A is included with this notification.

11. New Source Review Permit(s) to Install (PTI) associated with this application? ☒ Yes ☐ No

If Yes, enter the PTI Number(s) 16-21A ____ - ____ ____ - ____ ____ - ____ ____ - ____

12. Compliance Status - *A narrative compliance plan, including a schedule for compliance, must be submitted using an AI-001 if any of the following are checked No.*

a. Is the change identified above in compliance with the associated applicable requirement(s)? ☐ Yes ☐ No

b. Will the change identified above continue to be in compliance with the associated applicable requirement(s)? ☐ Yes ☐ No

c. If the change includes a future applicable requirement(s), will timely compliance be achieved? ☐ Yes ☐ No

13. Operator's Additional Information ID - *Create an Additional Information (AI) ID for the associated AI-001 form used to provide supplemental information.* **AI**

| 14. Contact Name | Telephone No. | E-mail Address |
|---|---|---|
| Amy Kapuga | 517-788-2201 | AMY.KAPUGA@CMSENERGY.COM |

15. This submittal also updates the ROP renewal application submitted on ____/____/____ ☐ Yes ☐ N/A
*(If yes, a mark-up of the affected pages of the ROP must be attached.)*

**NOTE: A CERTIFICATION FORM (C-001) SIGNED BY A RESPONSIBLE OFFICIAL MUST ACCOMPANY ALL SUBMITTALS**

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

August 30, 2022

**PERMIT TO INSTALL**
16-21A

**ISSUED TO**
Consumers Energy Company – Muskegon River Compressor Station

**LOCATED AT**
8613 Pine Road
Marion, Michigan 49665

**IN THE COUNTY OF**
Osceola

**STATE REGISTRATION NUMBER**
N2901

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

| | |
|---|---|
| DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:<br>**August 1, 2022** | |
| DATE PERMIT TO INSTALL APPROVED:<br>**August 30, 2022** | SIGNATURE:<br>Mark C. Mitchell |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

# PERMIT TO INSTALL

## Table of Contents

## COMMON ACRONYMS

| | |
|---|---|
| AQD | Air Quality Division |
| BACT | Best Available Control Technology |
| CAA | Clean Air Act |
| CAM | Compliance Assurance Monitoring |
| CEMS | Continuous Emission Monitoring System |
| CFR | Code of Federal Regulations |
| COMS | Continuous Opacity Monitoring System |
| Department/department/EGLE | Michigan Department of Environment, Great Lakes, and Energy |
| EU | Emission Unit |
| FG | Flexible Group |
| GACS | Gallons of Applied Coating Solids |
| GC | General Condition |
| GHGs | Greenhouse Gases |
| HVLP | High Volume Low Pressure* |
| ID | Identification |
| IRSL | Initial Risk Screening Level |
| ITSL | Initial Threshold Screening Level |
| LAER | Lowest Achievable Emission Rate |
| MACT | Maximum Achievable Control Technology |
| MAERS | Michigan Air Emissions Reporting System |
| MAP | Malfunction Abatement Plan |
| MSDS | Material Safety Data Sheet |
| NA | Not Applicable |
| NAAQS | National Ambient Air Quality Standards |
| NESHAP | National Emission Standard for Hazardous Air Pollutants |
| NSPS | New Source Performance Standards |
| NSR | New Source Review |
| PS | Performance Specification |
| PSD | Prevention of Significant Deterioration |
| PTE | Permanent Total Enclosure |
| PTI | Permit to Install |
| RACT | Reasonable Available Control Technology |
| ROP | Renewable Operating Permit |
| SC | Special Condition |
| SCR | Selective Catalytic Reduction |
| SNCR | Selective Non-Catalytic Reduction |
| SRN | State Registration Number |
| TBD | To Be Determined |
| TEQ | Toxicity Equivalence Quotient |
| USEPA/EPA | United States Environmental Protection Agency |
| VE | Visible Emissions |

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

## POLLUTANT / MEASUREMENT ABBREVIATIONS

| | |
|---|---|
| acfm | Actual cubic feet per minute |
| BTU | British Thermal Unit |
| °C | Degrees Celsius |
| CO | Carbon Monoxide |
| $CO_2e$ | Carbon Dioxide Equivalent |
| dscf | Dry standard cubic foot |
| dscm | Dry standard cubic meter |
| °F | Degrees Fahrenheit |
| gr | Grains |
| HAP | Hazardous Air Pollutant |
| Hg | Mercury |
| hr | Hour |
| HP | Horsepower |
| $H_2S$ | Hydrogen Sulfide |
| kW | Kilowatt |
| lb | Pound |
| m | Meter |
| mg | Milligram |
| mm | Millimeter |
| MM | Million |
| MW | Megawatts |
| NMOC | Non-Methane Organic Compounds |
| $NO_x$ | Oxides of Nitrogen |
| ng | Nanogram |
| PM | Particulate Matter |
| PM10 | Particulate Matter equal to or less than 10 microns in diameter |
| PM2.5 | Particulate Matter equal to or less than 2.5 microns in diameter |
| pph | Pounds per hour |
| ppm | Parts per million |
| ppmv | Parts per million by volume |
| ppmw | Parts per million by weight |
| psia | Pounds per square inch absolute |
| psig | Pounds per square inch gauge |
| scf | Standard cubic feet |
| sec | Seconds |
| $SO_2$ | Sulfur Dioxide |
| TAC | Toxic Air Contaminant |
| Temp | Temperature |
| THC | Total Hydrocarbons |
| tpy | Tons per year |
| µg | Microgram |
| µm | Micrometer or Micron |
| VOC | Volatile Organic Compounds |
| yr | Year |

## GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install 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 this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit 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 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. 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 Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

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

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. 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). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

# EMISSION UNIT SPECIAL CONDITIONS

## 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 |
|---|---|---|---|
| EUTURBINE2-2 | Natural gas-fired Solar Taurus 70 turbine rated at 11,419 hp with a maximum design heat input capacity of 96.5 MMBtu/hr (HHV). The turbine is equipped with SoLoNOx dry-low-NOx combustion control. | February 9, 2022 | FGMACTYYYY |

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

# EUTURBINE2-2
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Natural gas-fired Solar Taurus 70 turbine rated at 11,419 hp with a maximum design heat input capacity of 96.5 MMBtu/hr (HHV).

**Flexible Group ID:** FGMACTYYYY

## POLLUTION CONTROL EQUIPMENT

SoLoNOx dry-low-NOx combustion control.

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. NOx | 25 ppmvd or 150 ng/J of useful output (1.2 lb/MWh) [A,B,C] | Hourly [D] | EUTURBINE2-2 | SC V.1, SC VI.5, SC VI.7 | 40 CFR 60.4320(a), Table 1 of 40 CFR Part 60 Subpart KKKK |
| 2. NOx | 5.3 pph [A, B] | Hourly, except during startup and shutdown, and cold weather operations | EUTURBINE2-2 | SC V.1, SC VI.5, SC VI.7 | R 336.1205(1)(a)&(3), 40 CFR 52.21(c) & (d) |
| 3. NOx | 23.5 tpy | 12-month rolling time period as determined at the end of each calendar month | EUTURBINE2-2 | SC VI.6, SC VI.7 | R 336.1205(1)(a)&(3), 40 CFR 52.21(c) & (d) |
| 4. $SO_2$ | 0.060 lb/MMBtu | Hourly | EUTURBINE2-2 | SC VI.7 | 40 CFR 60.4330 |

ppmvd = parts per million by volume at 15 percent $O_2$ and on a dry gas basis
lb/MWh = pound per megawatt hour

[A] Does not include startup and shutdown.

[B] Startup is defined as the period of time from initiation of the combustion process (flame-on) from shutdown status and continues until steady state operation (loads greater than a demonstrated percent of design capacity) is achieved. Shutdown is defined as that period of time from the lowering of the turbine output below the demonstrated steady state level, with the intent to shut down, until the combustion process ends at flame-off. The demonstrated percent of design capacity, or demonstrated steady state level, shall be described in the plan required in SC III.2.

[C] Table 1 of 40 CFR Part 60 Subpart KKKK allows 150 ppmvd NOx at 15 percent $O_2$ when the turbines are operating at less than 75 percent of peak load, or at temperatures less than 0°F.

[D] For turbines using continuous emissions monitoring or continuous parameter monitoring, the time period is a 4-hour rolling unit operating hour average (40 CFR 60.4380(b)

## II. MATERIAL LIMIT(S)

| Material | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Sulfur content in natural gas | 5 gr/100 scf [A] | At all times | EUTURBINE2-2 | SC VI.7 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |

[A] The sulfur content limit in 40 CFR 60.4365 is 20 gr/100 scf. SC II.1 subsumes the NSPS requirement.

2. The permittee shall only burn natural gas in EUTURBINE2-2. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 60.4330)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Within 180 days of initial startup, the permittee shall submit, implement, and maintain a malfunction abatement plan (MAP) as described in Rule 911(2) for EUTURBINE2-2. 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.
   d) Operating variables and ranges under various load conditions shall be monitored and recorded. The normal operating range of these variables and a description of the method of monitoring shall be 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 AQD 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 336.1205(1)(a) & (3), R 336.1224, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 60.4333(a))**

2. Within 180 days of initial startup, the permittee shall submit, implement, and maintain a plan that describes how emissions will be minimized during startup and shutdown. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporate standard industry practices, and shall describe the demonstrated percent of design capacity, or demonstrated steady state level. Unless notified by the District Supervisor within 30 business days after plan submittal, the plan shall be deemed approved. **(R 336.1911, R 336.1912, 40 CFR 60.4333(a))**

3. The total events for startup and shutdown for EUTURBINE2-2 shall not exceed 100 startup and 100 shutdown events per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

4. The permittee shall not operate EUTURBINE2-2 unless the SoLoNOx control is operating at all times, not including startups and shutdowns. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity for EUTURBINE2-2 shall not exceed, on a fuel heat input basis, 96.5 MMBTU per hour (HHV) at 32°F, as described in the manufacturer's product documentation. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

2. The permittee shall not operate EUTURBINE2-2 unless the dry-low-$NO_x$ (SoLoNOx) control is installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each turbine in accordance with an approved MAP for EUTURBINE2-2 as required in SC III.1. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1910, 40 CFR 52.21(c) & (d))**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the natural gas usage rate for EUTURBINE2-2 on a continuous basis. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the operation of the SoLoNO$_x$ control for EUTURBINE2-2 on a continuous basis. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

5. As an alternative to subsequent stack test requirement listed in SC V.1, the permittee shall install, calibrate, maintain and operate in a satisfactory manner one of the following continuous monitoring systems to monitor and record the NOx emissions and $O_2$ or $CO_2$ content of the exhaust gas from EUTURBINE2-2 on a continuous basis:
   a) Continuous emission monitoring system (CEMS) as described in 40 CFR 60.4340(b)(1) and 40 CFR 60.4345; or
   b) Continuous parameter monitoring system (as described in 40 CFR 60.4340(b)(2); or
   c) If EUTURBINE2-2 is also regulated under 40 CFR Part 75, with approval from the AQD District Supervisor, the permittee may monitor the $NO_x$ emission rate using the methodology in 40 CFR Part 75, Appendix E, or the low mass emissions methodology in 40 CFR 75.19, as described in 40 CFR 60.4340(b)(2)(iv); or
   d) Alternative monitoring system approved under 40 CFR Part 60 Subpart A.

   The permittee shall install and operate the CEMS or Alternative Monitoring System (AMS) to meet the timelines and requirements detailed in Appendix A.
   **(R 336.1205(1)(a) & (b), 40 CFR 60.4340(b), 40 CFR 60.4345, 40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**

## V. TESTING/SAMPLING

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

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup, the permittee shall verify NOx emission rates from EUTURBINE2-2, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed in accordance with applicable Federal Reference Methods, 40 CFR Part 60 Appendix A, and 40 CFR 60.4400. Testing must be conducted annually (at least every 14 calendar months). If the stack test result is less than or equal to 75 percent of the NOx limits in SC I.1, the test plan can be changed to once every two years (at least every 26 calendar months). If subsequent test results yield NOx emissions greater than 75 percent of the NOx limit in SC I.1, annual testing must be resumed.

   As an alternative, if the permittee elects to use a CEMS or AMS as described by SC IV.5, the permittee shall comply with the following applicable initial performance testing requirements:
   a) If using a NOx-diluent CEMS to show compliance, the initial performance test shall be performed in accordance with 40 CFR 60.4405; or
   b) If the permittee elects to monitor combustion parameters or parameters indicative of proper operation of $NO_x$ emission controls, the appropriate parameters must be continuously monitored and recorded during each run of the initial performance test, as specified in 40 CFR 60.4410 and 40 CFR 60.4355; or
   b) If EUTURBINE2-2 is also regulated under 40 CFR Part 75, with approval from the AQD District Supervisor, the permittee may monitor the $NO_x$ emission rate using the methodology in 40 CFR Part 75, Appendix E, or the low mass emissions methodology in 40 CFR 75.19, as described in 40 CFR 60.4340(b)(2)(iv).

   No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit 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. If a CEMS or AMS is being used, the permittee shall meet the timelines and requirements detailed in Appendix A. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.4340, 40 CFR 60.4400, 40 CFR 60.4405, 40 CFR 60.4410, 40 CFR Part 60 Subpart KKKK, 40 CFR Part 75 Appendix E)**

## VI. MONITORING/RECORDKEEPING

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), 40 CFR 60.4345)**

2. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for EUTURBINE2-2 on an hourly and monthly basis. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3))**

3. The permittee shall monitor and record, in a satisfactory manner, the status of the SoLoNO$_x$ operation on EUTURBINE2-2 for all operating hours on an hourly basis, in order to show compliance with SC III.4. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3))**

4. The permittee shall keep, in a satisfactory manner, a record of the date and time of each startup and shutdown event, and monthly and 12-month rolling total number of startup and shutdown events for EUTURBINE2-2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

5. If the permittee elects to utilize a CEMS or AMS for compliance with the NOx emission limits in SC I.1 and I.2, the permittee shall monitor and record hourly NO$_x$ mass emissions and 4-hour rolling unit operating hour average NOx concentration, for EUTURBINE2-2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(c) & (d), 40 CFR 60.4345)**

6. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling NO$_x$ mass emissions for EUTURBINE2-2. The permittee shall keep records of the basis of the calculations, including any product documentation from the turbine manufacturer used to determine emissions during startup and shutdown. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

7. The permittee shall maintain records of all information necessary for all notifications and reports as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit for EUTURBINE2-2. This information shall include, but shall not be limited to the following:
   a) Compliance tests and any testing required under the special conditions of this permit;
   b) Monitoring data;
   c) Total sulfur content (gr/100 scf) and potential $SO_2$ emissions (lb/MMBtu) of the natural gas as required by 40 CFR 60.4365(a) or (b);
   d) Verification of heat input capacity as required by SC IV.1;
   e) Identification, type, and amount of fuel combusted on a calendar month basis as required by SC VI.2;
   f) All records required by 40 CFR 60.7;
   g) Records of the dates and times of startup and shutdown events;
   h) All calculations necessary to show compliance with the limits contained in this permit;
   i) All records related to, or as required by, the MAP and the startup and shutdown plan.

   All of the above information shall be stored in a format acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1331(1)(c), R 336.1702(a), R 336.1912, 40 CFR 60.7, 40 CFR 60.4365, 40 CFR Part 60 Subpart KKKK)**

## VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUTURBINE2-2. **(R 336.1201(7)(a))**

2. The permittee shall provide written notification of the date construction commences and the actual date of initial startup of EUTURBINE2-2, in accordance with 40 CFR 60.7. The permittee shall submit the notification(s) to the AQD District Supervisor within the time frames specified in 40 CFR 60.7 where applicable. **(40 CFR 60.7(a))**

3. If the permittee elects to use a CEMS or AMS to demonstrate compliance with NOx emission limits, the permittee shall submit excess emissions and monitor downtime reports required under 40 CFR 60.7(c) by the 30th day following the end of each 6-month period. **(40 CFR 60.7(c), 40 CFR 60.4375(a), 40 CFR 60.4380, 40 CFR 60.4395)**

## 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 |
|---|---|---|---|
| 1. SVTURBINE2-2 | 71.5 | 60 | R 336.1225, 40 CFR 52.21(c) & (d) |

## 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 and KKKK, as they apply to EUTURBINE2-2. **(40 CFR Part 60 Subparts A & KKKK)**

2. The permittee shall comply with all provisions of the federal National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines as specified in 40 CFR Part 63 Subparts A and YYYY, as they apply to EUTURBINE2-2. **(40 CFR Part 63 Subparts A & YYYY)**

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

# FLEXIBLE GROUP SPECIAL CONDITIONS

## 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 |
|---|---|---|
| FGMACTYYYY | Requirements for stationary combustion turbines located at major sources of HAP emissions not using an oxidation catalyst | EUTURBINE2-2 |

# FGMACTYYYY
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Requirements for a stationary combustion turbines located at major sources of HAP emissions not using an oxidation catalyst

**Emission Unit:** EUTURBINE2-2

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Formaldehyde | 91 ppbv at 15% oxygen except during startup[A] | Hourly | Each unit in FGMACTYYYY | SC V.1, SC V.2, SC IV.2 | 40 CFR 63.6100, 40 CFR Part 63 Subpart YYYY Table 1.1 |

[A] The period of time for startup is subject to the limits specified in the definition of startup 40 CFR 63.6175

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must operate and maintain each stationary combustion turbine, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions at all times. **(40 CFR 63.6105(c))**

2. The permittee shall comply with the emissions limitations, operating limitations, and other requirements in 40 CFR Part 63, Subpart YYYY at all times. **(40 CFR 63.6105(a))**

3. If the stationary combustion turbine is not equipped with an oxidation catalyst, the permittee must petition the USEPA for operating limitations that the permittee must monitor to demonstrate compliance with the formaldehyde emission limit in SC I.1. **(40 CFR 63.6120(e))**

4. If the stationary combustion turbine is not equipped with an oxidation catalyst and the permittee petition the USEPA for approval of additional operating limitation to demonstrate compliance with the formaldehyde emission limitation in SC I.1, the petition much include the following information **(40 CFR 63.6120(f))**:
   a) Identification of the specific parameters proposed to use as additional operating limitations;
   b) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with change in these parameters and how limitations on these parameters will serve to limit HAP emissions;
   c) A discussion on how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;
   d) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

e) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, maintain, and operate a device to measure the operating parameters from the petition in SC III.4 during the initial performance test and continuously monitor thereafter. **(40 CFR 63.6120(e), 40 CFR 63.6125(b))**

2. The permittee must demonstrate continuous compliance with SC I.1 and operating limitations in Table 1 and Table 2 according to methods specified in Table 5 of 40 CFR 63 Subpart YYYY. **(40 CFR 63.6140(a))**

## V. TESTING/SAMPLING

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

1. Not later than 180 calendar days after each unit becomes subject to 40 CFR 63 Subpart YYYY, the permittee shall conduct the initial performance test for formaldehyde emission rates from each unit by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in

| Pollutant | Test Method Reference |
|---|---|
| Formaldehyde | Table 3 in 40 CFR Part 63 Subpart YYYY |

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit 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. **(40 CFR 63.6120, 40 CFR 6145(e), 40 CFR Part 63, Subpart YYYY, Tables 1 and 3)**

2. The permittee shall verify the formaldehyde emission rates from each emission unit annually as specified in Table 3 in 40 CFR Part 63 Subpart YYYY. **(40 CFR 63.6115)**

## VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep the records as described in 40 CFR 63.6155(a), (c), and (d). **(40 CFR 63.6155(a), (c), and (d))**

2. If the stationary combustion turbine is not equipped with an oxidation catalyst, the permittee must continuously monitor any parameter specified in the approved petition to the USEPA, in order to comply with the operating limitations in Table 2 and Table 5 in 40 CFR Part 63 Subpart YYYY. **(40 CFR 63.6125(b))**

3. The permittee must conduct all parametric monitoring at all times while the stationary combustion turbine is operating except during malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system). **(40 CFR 63.6135(a))**

## VII. REPORTING

1. The permittee shall provide a written initial notification not later than 120 calendar days after the stationary combustion turbine becomes subject to 40 CFR 63 Subpart YYYY. The notification must include the information in 40 CFR 63.9(b)(2)(i) through (v) and a statement that your new or reconstructed stationary combustion turbine has no additional emission limitation requirements and must explain the basis of the exclusion. **(40 CFR 63.9(b), 40 CFR 63.6095(d), 40 CFR 63.6145)**

2. The permittee shall submit applicable notifications specified in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), 40 CFR 63.8(f)(4), and 40 CFR 63.9(b) and (h). **(40 CFR 63.6145)**

3. The permittee shall submit all semiannual compliance reports and semiannual reports of monitoring and deviations from any emissions limitation or operation and maintenance requirement as required by 40 CFR 63.6150(a), (b), and (d). **(40 CFR 63.6150(a), (b), and (d))**

4. The permittee shall submit a Notification of Compliance Status according to 40 CFR 63.9(h)(2)(ii) for each performance test required to demonstrate compliance with the emission limitations for formaldehyde before the close of business on the 60th calendar day following the completion of the performance test. **(40 CFR 63.6145(f))**

5. The permittee must submit all performance test required by 40 CFR 63.6145(f) electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). **(40 CFR 63.6150(f))**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines as specified in 40 CFR Part 63 Subparts A and YYYY. **(40 CFR Part 63 Subparts A & YYYY)**

## APPENDIX A
## CEMS and AMS Requirements

1. Not less than 30 calendar days prior to commencement of initial start-up of a CEMS or AMS for compliance monitoring purposes, the permittee shall submit two copies of a Monitoring Plan to the AQD, for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CEMS/AMS.

2. Not less than 30 calendar days prior to commencement of initial start-up up of a CEMS/AMS for compliance monitoring purposes, the permittee shall submit two copies of a complete test plan for the CEMS/AMS to the AQD for approval.

3. The permittee shall complete the installation and testing of the CEMS/AMS before such system is used for compliance monitoring purposes.

4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the CEMS complies with the requirements of the corresponding Performance Specifications (PS) in the following table, as applicable:

| Pollutant | Applicable PS |
|---|---|
| NOx | 2 |
| $O_2$ & $CO_2$ | 3 |
| AMS | As specified in an EPA approval under 40 CFR Part 60, Subpart A. |

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

6. The CEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and the PS, listed in the table above, of Appendix B to 40 CFR Part 60. If an AMS is installed in lieu of a CEMS, the AMS shall be installed, maintained, and operated in accordance with any requirements stipulated in EPA's approval of the AMS under 40 CFR Part 60, Subpart A.

7. Each calendar quarter that the CEMS is used for compliance monitoring purposes, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. As an alternative, the permittee may perform the Quality Assurance Procedures for CEMS set forth in Appendix B of 40 CFR Part 75 for the EUCOMBTURB01. Within 30 days following the end of each 6-month period, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR Part 60).

8. 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 6-month period that the CEMS/AMS is used for compliance monitoring purposes. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
   a) A report of each exceedance above the limits specified in the conditions of this permit. 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/AMS downtime and corrective action.
   c) A report of the total operating time of EUCOMBTURB01 during the reporting period.
   d) A report of any periods that the CEMS exceeds the instrument range.
   e) If no exceedances or CEMS/AMS downtime occurred during the reporting period, the permittee shall report that fact.

9. The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

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

EFFECTIVE DATE: January 22, 2020

ISSUED TO

**CONSUMERS ENERGY COMPANY**
**Consumers Energy – Muskegon River Compressor Station**

State Registration Number (SRN): N2901

LOCATED AT

8613 Pine Road, Marion, Clare County, Michigan 49665

## RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-N2901-2020

Expiration Date: January 22, 2025

Administratively Complete ROP Renewal Application Due Between
July 22, 2023 and July 22, 2024

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 Rule 210(1) of the administrative rules promulgated under Act 451, 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-N2901-2020

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(1) of Act 451. Pursuant to Rule 214a of the administrative rules promulgated under Act 451, 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

_____
Chris Hare, Bay City 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 is state-only enforceable will be noted as such.

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

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

# A. GENERAL CONDITIONS

### Permit Enforceability

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

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

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

### General Provisions

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

2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**

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

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

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

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

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

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

### Equipment & Design

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

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

### Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in Subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following:"[2] **(R 336.1301(1))**
    a. A 6-minute average of 20% 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 state 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 60604-3507. **(R 336.1213(4)(c))**

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

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

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

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

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

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

### Permit Shield

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

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

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

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

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

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

### Revisions

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

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

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

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

### Reopenings

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

## Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(9))**

## 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 SPECIAL 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 |
|---|---|---|---|
| EUGLYCDEHY | Existing small natural gas triethylene glycol (TEG) dehydrator equipped with a thermal oxidizer to control VOC emissions, including the reboiler burner and reboiler still vent. This emission unit is subject to 40 CFR Part 63, Subpart HHH. (PTI 161-01) | 09/17/2001 | NA |
| EUTURBINERT248 | Grandfathered natural gas fired turbine. | 01/01/1963 | NA |
| EUTURBINE2-2 | Natural gas-fired Solar Taurus 70 turbine (nameplate 11,107 HP), with a maximum design heat input capacity of 96.5 MMBtu/hr (HHV). The turbine is equipped with SoLoNOx dry low-NOx combustion control | 02/09/2022 | FGMACTYYYY |
| EUAUXGEN3 | Natural gas-fired SI emergency RICE rated at 4.8 MMBTU/hr (>500 hp) that commenced construction or reconstruction before December 19, 2002. This emission unit is subject to 40 CFR Part 63, Subpart ZZZZ. | 01/01/1994 | NA |
| EURULE285(2)(mm) | Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a and Rule 285(2)(mm). | NA | NA |
| ~~EUDEGREASER1~~ | ~~New cold cleaner placed into operation after July 1, 1979, with an air/vapor interface less than 10 square feet that is grandfathered or exempt from Rule 201 pursuant to Rule 278, Rule 278a, and Rule 281(2)(h) or Rule 285(2)(r)(iv).~~ | ~~10/21/1994~~ ~~01/01/1996~~ | ~~NA~~ [exempt per Rule 281(2)(k)] |
| ~~EUENGINE306~~ | ~~Grandfathered natural gas fired RICE; 9 MMBTU/hr~~ | ~~01/01/1949~~ | ~~FGCOMPRESSORS~~ |
| ~~EUENGINE316~~ | ~~Grandfathered natural gas fired RICE; 9 MMBTU/hr~~ | ~~01/01/1949~~ | ~~FGCOMPRESSORS~~ |
| ~~EUENGINE319~~ | ~~Grandfathered natural gas fired RICE; 9 MMBTU/hr~~ | ~~01/01/1949~~ | ~~FGCOMPRESSORS~~ |
| ~~EUENGINE320~~ | ~~Grandfathered natural gas fired RICE; 9 MMBTU/hr~~ | ~~01/01/1949~~ | ~~FGCOMPRESSORS~~ |
| EUENGINEH9 | Grandfathered natural gas fired RICE; 21 MMBTU/hr | 01/01/1950 | FGCOMPRESSORS |
| EUENGINEH10 | Grandfathered natural gas fired RICE; 21 MMBTU/hr | 01/01/1950 | FGCOMPRESSORS |
| EUENGINEH11 | Grandfathered natural gas fired RICE; 21 MMBTU/hr | 01/01/1951 | FGCOMPRESSORS |
| EUENGINEH12 | Grandfathered natural gas fired RICE; 21 MMBTU/hr | 01/01/1951 | FGCOMPRESSORS |
| EUENGINET11 | Grandfathered natural gas fired RICE; 24 MMBTU/hr | 01/01/1957 | FGCOMPRESSORS |
| EUENGINET12 | Grandfathered natural gas fired RICE; 24 MMBTU/hr | 01/01/1957 | FGCOMPRESSORS |
| ~~EUENGINE3-1~~ | ~~Grandfathered natural gas fired RICE; 24 MMBTU/hr~~ | ~~01/01/1973~~ | ~~FGCOMPRESSORS~~ |
| ~~EUENGINE3-2~~ | ~~Grandfathered natural gas fired RICE; 24 MMBTU/hr~~ | ~~01/01/1973~~ | ~~FGCOMPRESSORS~~ |
| EUAUXGEN1A | Natural gas-fired SI emergency RICE rated at 3.8 MMBTU/hr (<500 hp). This emission unit is subject to 40 CFR Part 63, Subpart ZZZZ. | 06/01/1999 | FGAUXGENS |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EUAUXGEN2A | Natural gas-fired SI emergency RICE rated at 3.8 MMBTU/hr (<500 hp). This emission unit is subject to 40 CFR Part 63, Subpart ZZZZ. | 06/01/1999 | FGAUXGENS |
| EUBLR9 | Natural gas-fired boiler for building and process heat rated at 3.35 MMBTU/hr. This emission unit is subject to 40 CFR Part 63, Subpart DDDDD. | 01/01/1994 | FGPROCESSHTRS |
| EUFUELHTR | Natural gas-fired fuel heater rated at 250,000 BTU/hr. This emission unit is subject to 40 CFR Part 63, Subpart DDDDD. | 01/01/1994 | FGPROCESSHTRS |
| EUFUELHTR1 | Natural gas-fired fuel heater rated at 450,000 BTU/hr. This emission unit is subject to 40 CFR Part 63, Subpart DDDDD. | 01/01/1994 | FGPROCESSHTRS |
| EUREBOILER | Natural gas-fired reboiler burner associated with EUGLYCDEHY rated at 1 MMBTU/hr. This emission unit is subject to 40 CFR Part 63, Subpart DDDDD. | 09/17/2001 | FGPROCESSHTRS |

# EUGLYCDEHY
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Existing small natural gas triethylene glycol (TEG) dehydrator equipped with a thermal oxidizer to control VOC emissions, including the reboiler burner and reboiler still vent. This emission unit is subject to 40 CFR Part 63, Subpart HHH – National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities. (PTI 161-01)

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

Thermal oxidizer

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Benzene | 0.8 tons per year[1] | 12- Month Rolling Time Period | EUGLYCDEHY | SC IV.1, V.1, VI.1, and VI.2 | **R 336.1901** |
| 2. BTEX | Calculated using the equation in Appendix 7 | Annual | EUGLYCDEHY | SC III.6, V.2, V.3, V.5, VI.6, VI.14, and VI.28 | **40 CFR 63.1274(c)(1), 40 CFR 63.1275(b)(1)(iii)** |

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not process natural gas in EUGLYCDEHY unless the flash tank is installed, maintained, and operating properly. Proper operation requires routing the flash tank exhaust gas to the thermal oxidizer or reboiler burner for destruction.[2] **(R 336.1910)**

2. The permittee shall not process natural gas in EUGLYCDEHY unless the thermal oxidizer is installed, maintained, and operating properly. Proper operation of the thermal oxidizer requires a minimum VOC destruction efficiency of 98% (by weight), and a minimum retention time of 0.5 seconds.[1] **(R 336.1901)**

3. The permittee shall operate and maintain each glycol dehydration unit, including the associated air pollution control and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. **(40 CFR 63.1274(h))**

4. The permittee shall connect the process vent to a control device through a closed-vent system. The closed vent system shall be designed and operated in accordance with the requirements of SC IV.2. **(40 CFR 63.1274(c)(1), 40 CFR 63.1275(b)(1)(iii)(A))**

5. The permittee shall operate the control device in accordance with the requirements specified below: **(40 CFR 63.1274(c)(2), 40 CFR 63.1275(b)(1)(iii)(A), 40 CFR 63.1281(f)(1)(i)(A) & (f)(2), 40 CFR 63.1282(e)(1))**
   a. The thermal oxidizer must be designed and operated such that the mass content of BTEX in the gases vented to the device is reduced as determined in accordance with the requirements of SC V.5 and VI.6.
   b. The thermal oxidizer shall be operating at all times. The permittee may vent more than one unit to the thermal oxidizer.
   c. The thermal oxidizer shall be operated at the site-specific minimum operating temperature established during the most recent compliance demonstration.

6. Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities, the CMS required in 40 CFR 63.1283(d) must be operated at all times EUGLYCDEHY is operating. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. Monitoring system repairs are required to be completed in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. **(40 CFR 63.1282(e)(4))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install a device equipped with a continuous recorder to continuously measure and record the combustion chamber temperature of the thermal oxidizer. For a thermal oxidizer, the temperature monitoring device shall have a minimum accuracy of ±2 percent of the temperature being monitored in °C, or ±2.5°C, whichever value is greater. The temperature sensor shall be installed at a location representative of the combustion zone temperature.[2] **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(3)(i))**

2. The closed vent system shall be designed and operated in accordance with the following requirements: **(40 CFR 63.1274(c)(2), 40 CFR 63.1281(c))**
   a. The closed-vent system shall route all gases, vapors, and fumes emitted from the material in an emission unit to a control device that meets the requirements specified in SC III.5.
   b. The closed-vent system shall be designed and operated with no detectable emissions.
   c. Any bypass devices in the closed-vent system that could divert emissions from entering the control device shall be equipped with a flow indicator at the inlet to the bypass device that takes readings every 15 minutes, and that sounds an alarm when the bypass device is open; or secure the bypass device valve at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

3. The continuous parameter monitoring system (CPMS) shall measure data values at least once every hour and record either: **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(1)(i))**
   a. Each measured data value; or
   b. Each block average value for each 1-hour period or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values.

## 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 analyze the natural gas processed in EUGLYCDEHY to determine its composition. The analysis shall include analysis for nitrogen, carbon dioxide, C1 through C6 series, benzene, toluene, xylene, ethylbenzene, and hexane. The sampling shall occur at least once each calendar year. The permittee shall obtain a sample and conduct an analysis of the wet gas stream in accordance with methods that are standard in the natural gas industry. Any request for a change in the sample frequency must be submitted to the AQD District Supervisor for review and approval.[1] **(R 336.1901)**

2. Determination of the actual flow rate of natural gas to each glycol dehydration unit shall be made using either of the following procedures: **(40 CFR 63.1282(a)(1))**
   a. Install and operate a monitoring instrument that directly measures natural gas flow rate to each glycol dehydration unit with an accuracy of ± 2 percent or better. The annual natural gas flow rate shall be converted to a daily average by dividing the annual flow rate by the number of days per year each emission unit processed natural gas.
   b. Document, to the AQD's satisfaction, the actual annual average natural gas flow rate to each glycol dehydration unit.

3. Determination of the actual average BTEX emissions from each glycol dehydration unit shall be made using GRI-GLYCalc™, Version 3.0 or higher. Inputs to the model shall be representative of actual operating conditions of EUGLYCDEHY and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydration Emissions" (GRI-95/0368.1). **(40 CFR 63.1282(a)(2)(i))**

4. The permittee shall perform "no detectable emissions" testing for closed vent systems using the test methods and procedures specified in 40 CFR 63.1282(b). **(40 CFR 63.1282(b))**

5. The permittee must conduct a performance test to demonstrate that the thermal oxidizer meets the requirements of SC III.5. The permittee shall conduct emissions testing for compliance with SC I.2 calculated using Equation 1 in Appendix 7 using the following test methods and procedures: **(40 CFR 63.1282(d)(3))**
   a. Method 1 or 1A, 40 CFR Part 60, Appendix A, as appropriate, shall be used for selection of the sampling sites. The sampling site shall be located at the outlet of the combustion device.
   b. The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, 40 CFR Part 60, Appendix A, as appropriate.
   c. To determine compliance with SC I.2, the permittee shall use one of the following methods: Method 18, 40 CFR Part 60, Appendix A; ASTM D64200-99 (Reapproved 2004); or any other method or data that have been validated according to the applicable procedures in Method 301, 40 CFR Part 63, Appendix A. The BTEX emissions shall be calculated according to the procedures in 40 CFR 63.1282(d)(3)(v)(A) & (B).
   d. The permittee shall conduct performance tests according to the following schedule:
      i. An initial performance test shall be conducted no later than October 15, 2015;
      ii. The first periodic performance test shall be conducted not later than 60 months after the initial performance test. Subsequent periodic performance tests shall be conducted at intervals no longer than 60 months following the previous periodic performance test or whenever a source desires to establish a new operating limit. Combustion control devices meeting either of the following criteria are not required to conduct periodic performance tests:
         A. A control device whose model is tested under, and meets the criteria of manufacturers' performance test in 40 CFR 63.1282(g);
         B. A combustion control device demonstrating during the performance test that combustion zone temperature is an indicator of destruction efficiency and operates at a minimum temperature of 1400 degrees F.

6. An alternate test method, or a modification to the approved EPA Test Method, may be specified in an AQD-approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit 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 336.1213(3), R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1285(b)(3))**

7. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(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 calculate the benzene emission rate from EUGLYCDEHY for each calendar month and 12-month rolling time period, using a method acceptable to the AQD District Supervisor. If GRI-GLYCalc (Version 3.0 or higher) is used to calculate the emission rates, the inputs to the model shall be representative of actual operating conditions of EUGLYCDEHY and shall include the most recent gas analysis data. Any request for a change in the calculation frequency must be submitted to the AQD District Supervisor for review and approval. Records of the benzene emission rate are for the purpose of compliance demonstration and shall be kept on file for a period of at least five years and made available to the Department upon request.[1] **(R 336.1901)**

2. The permittee shall keep the following records:[1] **(R 336.1901)**
   a. Wet gas composition as determined through analysis of wet gas samples as required in SC V.1;
   b. Records of the thermal oxidizer temperature.

3. The permittee shall estimate emissions for major source determination purposes using the maximum annual natural gas throughput calculated using the equation in Appendix 7. As an alternative to calculating the maximum annual natural gas throughput, the permittee may use the facility design maximum annual natural gas throughput to estimate the maximum potential emissions. **(40 CFR 63.1270(a)(1))**

4. The permittee shall maintain records of the annual facility natural gas throughput each year. **(40 CFR 63.1270(a)(3))**

5. The permittee shall determine the maximum values for other parameters used to calculate potential emissions as the maximum over the same period for which maximum throughput is determined as specified in SC VI.3. These parameters shall be based on an annual average or the highest single measured value. For estimating maximum

potential emissions from glycol dehydration units, the glycol circulation rate used in the calculation shall be the unit's maximum rate under its physical and operational design consistent with the definition of potential to emit in 40 CFR 63.2. **(40 CFR 63.1270(a)(4))**

6. The permittee shall continuously monitor and record the temperature in the thermal oxidizer and calculate the daily average temperature for each operating day. Compliance shall be demonstrated using the following requirements: **(40 CFR 63.1274(c)(2), 40 CFR 63.1282(e)(1-3), 40 CFR 63.1283(d)(4))**
   a. Establish a site-specific minimum temperature to define the conditions at which the control device must be operated to continuously achieve compliance with SC I.2 according to the procedures in SC VI.14;
   b. Calculate the daily average of the temperature readings in accordance with SC VI.13;
   c. Compliance is achieved when the daily average of the temperature readings calculated under SC VI.6.b is greater than or equal to the minimum monitoring value established under SC VI.6.a.

7. Data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities may not be used in calculations used to report emissions or operating levels. All the data collected during all other required data collection periods must be used in assessing the operation of the control device and associated control system. **(40 CFR 63.1282(e)(5))**

8. Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required quality monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements. **(40 CFR 63.1282(e)(6))**

9. For each closed-vent system, the permittee shall comply with the following requirements: **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(c)(1-4))**
   a. Except for parts of the closed-vent system or cover that are designated unsafe to inspect or difficult to inspect, each closed-vent system and each bypass device shall be inspected according to the procedures specified below according the following schedule:
      i. For each closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted or gasketed ducting flange), the permittee shall:
         A. Conduct an initial inspection according to the procedures in 40 CFR 63.1282(b) to demonstrate that the closed-vent system operates with no detectable emissions;
         B. Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; or broken or missing caps or other closure devices.
      ii. For closed-vent system components other than those specified in SC VI.9.a.i:
         A. Conduct an initial inspection according to the procedures in 40 CFR 63.1282(b) to demonstrate that the closed-vent system operates with no detectable emissions;
         B. Conduct annual inspections according to the procedures in 40 CFR 63.1282(b) to demonstrate that the components or connections operate with no detectable emissions;
         C. Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork; loose connections; or broken or missing caps or other closure devices.
      iii. For each bypass device, except low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices, the permittee shall either:
         A. At the inlet to the bypass device that could divert the steam away from the control device to the atmosphere, set the flow indicator to take a reading at least once every 15 minutes; or
         B. If the bypass device valve installed at the inlet to the bypass device is secured in the non-diverting position using a car-seal or a lock-and-key type configuration, visually inspect the seal or closure mechanism at least once every month to verify that the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass device.
   b. In the event that a leak or defect is detected, the permittee shall repair the leak or defect as soon as practicable, except as provided in SC VI.9.c.
      i. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
      ii. Repair shall be completed no later than 15 calendar days after the leak is detected.
   c. Delay of repair of a closed-vent system for which leaks or defects have been detected is allowed if the repair is technically infeasible without a shutdown, as defined in 40 CFR 63.1271, or if the permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next shutdown.

10. Any parts of the closed-vent system or cover that are designated, as described below, as unsafe to inspect are exempt from the inspection requirements of SC VI.9 if: **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(c)(5))**
    a. The permittee determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with SC VI.9;
    b. The permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

11. Any parts of the closed-vent system or cover that are designated, as described below, as difficult to inspect are exempt from the inspection requirements of SC VI.9 if: **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(c)(6))**
    a. The permittee determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and
    b. The permittee has a written plan that requires inspection of the equipment at least once every 5 years.

12. A site-specific monitoring plan must be prepared that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in 40 CFR 63.1283(d). Each CPMS must be installed, calibrated, operated, and maintained in accordance with the procedures in the approved site-specific monitoring plan. The permittee may request approval of monitoring system quality assurance and quality control procedures alternative to those specified below and in the site-specific monitoring plan: **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(1)(ii-iv))**
    a. The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;
    b. Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;
    c. Equipment performance checks, system accuracy audits, or other audit procedures;
    d. Ongoing operation and maintenance procedures in accordance with provisions in 40 CFR 63.8(c)(1) and (c)(3);
    e. Ongoing reporting and recordkeeping procedures in accordance with provisions in 40 CFR 63.10(c), (e)(1), and (e)(2)(i).
    f. The permittee must conduct the CPMS equipment performance checks, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least once every 12 months.
    g. The permittee must conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan.

13. Using the data recorded by the monitoring system, except for inlet gas flow rate, the permittee must calculate the daily average value for each monitored operating parameter for each operating day. If EUGLYCDEHY operates continuously, the operating day is a 24-hour period. If EUGLYCDEHY does not operate continuously, the operating day is the total number of hours of control device operation per 24-hour period. Valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average. **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(4))**

14. For the thermal oxidizer, the permittee shall establish a minimum operating parameter value to define the conditions at which the control device must be operated to continuously achieve the emission limit in SC I.2. The minimum operating parameter value shall be established as follows: **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(5)(i))**
    a. If the permittee conducts performance tests to demonstrate that the control device achieves the applicable performance requirements, then the minimum operating parameter value shall be established based on values measured during the performance test and supplemented, as necessary, by a control device's manufacturer's recommendations.
    b. If the permittee operates a control device where the performance test requirement was met under 40 CFR 63.1282(g) to demonstrate that the control device achieves the applicable performance test requirements, then the maximum inlet gas flowrate shall be established based on the performance test and supplemented, as necessary, by the manufacturer's recommendations.

15. A deviation for a control device is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified below being met. When multiple operating parameters are monitored for the same control device and during the same operating day, and more than one of these operating parameters meets a deviation criterion specified below, then a single deviation is determined to have occurred for the control device for that operating day. **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(6)(i & iii))**
    a. When the daily average value of the thermal oxidizer combustion chamber temperature is less than the minimum operating limit established;
    b. When the monitoring data are not available for at least 75 percent of the operating hours in a day.

16. A deviation occurs for a closed-vent system containing one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device when: **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(6)(iv))**
    a. The flow indicator indicates that flow has been detected and that the stream has been diverted away from the control device to the atmosphere;
    b. If the seal or closure mechanism has been broken, the bypass line valve position has changed, the key for the lock-and-key type lock has been checked out, or the car-seal has broken.

17. For each deviation, the permittee shall be deemed to have failed to have applied control in a manner that achieves the required operating parameter limits. Failure to achieve the required operating parameter limits is a violation of 40 CFR Part 63, Subpart HHH. **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(7))**

18. Nothing in SC VI.12 through VI.17 shall be construed to allow or excuse a monitoring parameter deviation caused by any activity that violates other applicable provisions of 40 CFR Part 63, Subpart HHH. **(40 CFR 63.1274(c)(2), 40 CFR 63.1283(d)(9))**

19. All applicable records shall be maintained in such a manner that they can be readily accessed. The most recent 12 months of records shall be retained on site or shall be accessible from a central location by computer or other means that provides access within 2 hours after a request. The remaining 4 years of records may be retained offsite. Records may be maintained in hard copy or computer-readable form. **(40 CFR 63.1284(b)(1))**

20. The permittee shall maintain the records specified in 40 CFR 63.10(b)(2). **(40 CFR 63.1274(c)(3), 40 CFR 63.1284(b)(2))**

21. The permittee shall maintain the records specified in 40 CFR 63.10(c) for each monitoring system operated in accordance with the requirements of 40 CFR 63.1283(d). Notwithstanding the previous sentence, monitoring data recorded during periods identified below shall not be included in any average or percent leak rate computed under 40 CFR Part 63, Subpart HHH. Records shall be kept of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating or failed to collect required data. **(40 CFR 63.1284(b)(3))**
    a. Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments;
    b. Periods of non-operation resulting in cessation of the emissions to which the monitoring applies; and
    c. Deviations due to invalid data as defined in SC VI.15.

22. The permittee shall maintain the following records up to date and readily accessible: **(40 CFR 63.1274(c)(3), 40 CFR 63.1284(b)(4), 40 CFR 63.1284(g))**
    a. Continuous records of the equipment operating parameters specified to be monitored in 40 CFR 63.1283(d);
    b. Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in SC VI.13;
    c. The following records for a control device whose model is tested under the manufacturers' performance test:
        i All visible emission readings and flow rate calculations made during the compliance determination;
        ii All hourly records and other recorded periods when the pilot flame is absent;
    d. Hourly records of the times and durations of all periods when the vent stream is diverted from the control device or the device is not operating;
    e. Where a seal or closure mechanism is used to comply with 40 CFR 63.1281(c)(3)(i)(B), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanism has been done, and shall record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken.

23. The permittee shall maintain records identifying all parts of the closed-vent system that are designated as unsafe to inspect in accordance with SC VI.10, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment. **(40 CFR 63.1274(c)(3), 40 CFR 63.1284(b)(5))**

24. The permittee shall maintain records identifying all parts of the closed-vent system that are designated as difficult to inspect in accordance with SC VI.11, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment. **(40 CFR 63.1274(c)(3), 40 CFR 63.1284(b)(6))**

25. The permittee shall maintain the following records for each inspection conducted in accordance with SC VI.9 through VI.11 during which a leak or defect is detected: **(40 CFR 63.1274(c)(3), 40 CFR 63.1284(b)(7))**
    a. The instrument identification numbers, operator name or initials, and identification of the equipment;

b. The date the leak or defect was detected and the date of the first attempt to repair the leak or defect;
c. Maximum instrument reading measured by the method specified in 40 CFR 63.1282(b) after the leak or defect is successfully repaired or determined to be non-repairable;
d. "Repair delayed" and the reason for the delay if a leak or defect is not repaired within 15 calendar days after discovery of the leak or defect;
e. The name, initials, or other form of identification of the permittee (or designee) whose decision it was that repair could not be affected without a shutdown;
f. The expected date of successful repair of the leak or defect if a leak or defect is not repaired within 15 calendar days;
f. Dates of shutdowns that occur while the equipment is unrepaired;
g. The date of successful repair of the leak or defect.

26. For each inspection conducted in accordance with SC VI.9 through VI.11 during which no leaks or defects are detected, the permittee shall maintain a record that the inspection was performed, the date of the inspection, and a statement that no leaks or defects were detected. **(40 CFR 63.1274(c)(3), 40 CFR 63.1284(b)(8))**

27. The permittee shall maintain records of the occurrence and duration of each malfunction of process equipment or the air pollution control equipment and monitoring equipment. The permittee shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with SC III.3 including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. **(40 CFR 63.1274(c)(3), 40 CFR 63.1284(f))**

28. The permittee shall calculate and maintain records of the annual BTEX emissions as specified in SC I.2. and SC V.3. **(R 336.1213(3))**

**See Appendix 7**

## VII. REPORTING

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

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

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

4. The permittee shall submit a Notification of Compliance Status Report to the USEPA Administrator as required under 40 CFR 63.9(h) by April 12, 2016. In addition to the information required under 40 CFR 63.9(h), the Notification of Compliance Status Report shall include the information specified in 40 CFR 63.1285(d)(1) through (12). If the permittee submits the required information at different times, and/or different submittals, subsequent submittals may refer to previous submittals instead of duplicating and resubmitting the previously submitted information. **(40 CFR 63.1274(c)(3), 40 CFR 63.1285(d))**

5. The permittee shall submit Periodic Reports to the USEPA Administrator semiannually beginning 60 calendar days after the end of the applicable reporting period. The first report shall be submitted no later than 240 days after the date the Notification of Compliance Status Report is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status Report is due. **(40 CFR 63.1274(c)(3), 40 CFR 63.1285(e)(1))**

6. The permittee shall include the information specified below in the semiannual Periodic Reports: **(40 CFR 63.1274(c)(3), 40 CFR 63.1285(e)(2))**
   a. The information required under 40 CFR 63.10(e)(3);
   b. A description of all deviations as defined in SC VI.15 and VI.16 that have occurred during the 6-month reporting period, and the information described in 40 CFR 63.1285(e)(2)(ii);
   c. For each inspection conducted in accordance with SC VI.9 through VI.11 during which a leak or defect is detected, the records specified in SC VI.25 must be included in the next Periodic Report;
   d. For each closed-vent system with a bypass line subject to 40 CFR 63.1281(c)(3)(i)(A), records required under SC VI.22 of all periods when the vent stream is diverted from the control device through a bypass line. For each closed-vent system with a bypass line subject to 40 CFR 63.1281(c)(3)(i)(B), records required under SC

VI.22 of all periods in which the seal or closure mechanism is broken, the bypass valve position has changed, or the key to unlock the bypass line valve was checked out;

e. A statement identifying if there were no excursions during the reporting period;
f. A statement identifying if there were no instances in which the continuous monitoring system has been inoperative, out of control, repaired, or adjusted during the reporting period;
g. Any change in compliance methods as specified in 40 CFR 63.1282(e);
h. The results of any periodic test as required in SC V.5 conducted during the reporting period;
i. Certification by a Responsible Official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

7. Whenever a process change is made, or a change in any of the information submitted in the Notification of Compliance Status Report, the permittee shall submit a report within 180 days after the process change is made or as a part of the next Periodic Report, whichever is sooner. The report shall include: **(40 CFR 63.1274(c)(3), 40 CFR 63.1285(f))**
   a. A brief description of the process change;
   b. A description of any modification to standard procedures or quality assurance procedures;
   c. Revisions to any of the information reported in the original Notification of Compliance Status Report under SC VII.4;
   d. Information required by the Notification of Compliance Status Report under SC VII.4 for changes involving the addition of processes or equipment.

8. Within 60 days after the date of completing a performance test (defined in 40 CFR 63.2) the permittee must submit the results of the performance tests to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*http://www.epa.gov/cdx*). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. All reports required by this subpart not subject to the above electronic reporting requirements must be sent to the Administrator at the appropriate address. The Administrator may request a report in any form suitable for the specific case (e.g., by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports in paper format. **(40 CFR 63.1274(c)(3), 40 CFR 63.1285(g))**

**See Appendix 8**

## VIII. STACK/VENT RESTRICTION(S)

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

| Stack & Vent ID | Maximum Exhaust Diameter / Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|---|---|---|---|
| 1. SVGLYCDEHYD | 29.5[1] | 35[1] | **R 336.1901** |

## 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, Subparts A and HHH, for Natural Gas Transmission and Storage Facilities.[2] **(40 CFR Part 63, Subparts A and HHH)**

**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).

# EUTURBINERT248
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Grandfathered natural gas-fired turbine.

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only fire natural gas in the turbine at this facility. **(R 336.1301(1))**

## 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 natural gas consumption rate for each calendar month. **(R 336.1213(3)(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. 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

**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).

# EUTURBINE2-2
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Natural gas-fired Solar Taurus 70 turbine rated at 11,419 hp with a maximum design heat input capacity of

96.5 MMBtu/hr (HHV).

**Flexible Group ID:** FGMACTYYYY

## POLLUTION CONTROL EQUIPMENT

SoLoNOx dry-low-NOx combustion control.

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. $NO_X$ | 25 ppmvd or 150 ng/J of useful output (1.2 lb/MWh) [A,B,C] | Hourly [D] | EUTURBINE2-2 | SC V.1, SC VI.5, SC VI.7 | 40 CFR 60.4320(a), Table 1 of 40 CFR Part 60 Subpart KKKK |
| 2. $NO_X$ | 5.3 pph [A, B] | Hourly, except during startup and shutdown, and cold weather operations | EUTURBINE2-2 | SC V.1, SC VI.5, SC VI.7 | R 336.1205(1)(a)&(3), 40 CFR 52.21(c) & (d) |
| 3. $NO_X$ | 23.5 tpy | 12-month rolling time period as determined at the end of each calendar month | EUTURBINE2-2 | SC VI.6, SC VI.7 | R 336.1205(1)(a)&(3), 40 CFR 52.21(c) & (d) |
| 4. $SO_2$ | 0.060 lb/MMBtu | Hourly | EUTURBINE2-2 | SC VI.7 | 40 CFR 60.4330 |

ppmvd = parts per million by volume at 15 percent $O_2$ and on a dry gas basis
lb/MWh = pound per megawatt hour

[A] Does not include startup and shutdown.

[B] Startup is defined as the period of time from initiation of the combustion process (flame-on) from shutdown status and continues until steady state operation (loads greater than a demonstrated percent of design capacity) is achieved. Shutdown is defined as that period of time from the lowering of the turbine output below the demonstrated steady state level, with the intent to shut down, until the combustion process ends at flame-off. The demonstrated percent of design capacity, or demonstrated steady state level, shall be described in the plan required in SC III.2.

[C] Table 1 of 40 CFR Part 60 Subpart KKKK allows 150 ppmvd NOx at 15 percent $O_2$ when the turbines are operating at less than 75 percent of peak load, or at temperatures less than 0°F.

[D] For turbines using continuous emissions monitoring or continuous parameter monitoring, the time period is a 4-hour rolling unit operating hour average (40 CFR 60.4380(b)

## II. MATERIAL LIMIT(S)

| Material | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Sulfur content in natural gas | 5 gr/100 scf[A] | At all times | EUTURBINE2-2 | SC VI.7 | R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d) |
| [A] The sulfur content limit in 40 CFR 60.4365 is 20 gr/100 scf. SC II.1 subsumes the NSPS requirement. | | | | | |

2. The permittee shall only burn natural gas in EUTURBINE2-2. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 60.4330)**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Within 180 days of initial startup, the permittee shall submit, implement, and maintain a malfunction abatement plan (MAP) as described in Rule 911(2) for EUTURBINE2-2. 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.
   d) Operating variables and ranges under various load conditions shall be monitored and recorded. The normal operating range of these variables and a description of the method of monitoring shall be 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 AQD 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 336.1205(1)(a) & (3), R 336.1224, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 60.4333(a))**

2. Within 180 days of initial startup, the permittee shall submit, implement, and maintain a plan that describes how emissions will be minimized during startup and shutdown. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporate standard industry practices, and shall describe the demonstrated percent of design capacity, or demonstrated steady state level. Unless notified by the District Supervisor within 30 business days after plan submittal, the plan shall be deemed approved. **(R 336.1911, R 336.1912, 40 CFR 60.4333(a))**

3. The total events for startup and shutdown for EUTURBINE2-2 shall not exceed 100 startup and 100 shutdown events per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

4. The permittee shall not operate EUTURBINE2-2 unless the SoLoNOx control is operating at all times, not including startups and shutdowns. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity for EUTURBINE2-2 shall not exceed, on a fuel heat input basis, 96.5 MMBTU per hour (HHV) at 32°F, as described in the manufacturer's product documentation.

   **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

2. The permittee shall not operate EUTURBINE2-2 unless the dry-low-$NO_x$ (SoLoNOx) control is installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining

each turbine in accordance with an approved MAP for EUTURBINE2-2 as required in SC III.1. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1910, 40 CFR 52.21(c) & (d))**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the natural gas usage rate for EUTURBINE2-2 on a continuous basis. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the operation of the SoLoNO$_x$ control for EUTURBINE2-2 on a continuous basis. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

5. As an alternative to subsequent stack test requirement listed in SC V.1, the permittee shall install, calibrate, maintain and operate in a satisfactory manner one of the following continuous monitoring systems to monitor and record the NOx emissions and $O_2$ or $CO_2$ content of the exhaust gas from EUTURBINE2-2 on a continuous basis:
   a) Continuous emission monitoring system (CEMS) as described in 40 CFR 60.4340(b)(1) and 40 CFR 60.4345; or
   b) Continuous parameter monitoring system (as described in 40 CFR 60.4340(b)(2); or
   c) If EUTURBINE2-2 is also regulated under 40 CFR Part 75, with approval from the AQD District Supervisor, the permittee may monitor the $NO_x$ emission rate using the methodology in 40 CFR Part 75, Appendix E, or the low mass emissions methodology in 40 CFR 75.19, as described in 40 CFR 60.4340(b)(2)(iv); or
   d) Alternative monitoring system approved under 40 CFR Part 60 Subpart A.

   The permittee shall install and operate the CEMS or Alternative Monitoring System (AMS) to meet the timelines and requirements detailed in Appendix A.

   **(R 336.1205(1)(a) & (b), 40 CFR 60.4340(b), 40 CFR 60.4345, 40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**

## V. TESTING/SAMPLING

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

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup, the permittee shall verify $NO_X$ emission rates from EUTURBINE2-2, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed in accordance with applicable Federal Reference Methods, 40 CFR Part 60 Appendix A, and 40 CFR 60.4400. Testing must be conducted annually (at least every 14 calendar months). If the stack test result is less than or equal to 75 percent of the NOx limits in SC I.1, the test plan can be changed to once every two years (at least every 26 calendar months). If subsequent test results yield NOx emissions greater than 75 percent of the NOx limit in SC I.1, annual testing must be resumed.

   As an alternative, if the permittee elects to use a CEMS or AMS as described by SC IV.5, the permittee shall comply with the following applicable initial performance testing requirements:

   a) If using a $NO_X$-diluent CEMS to show compliance, the initial performance test shall be performed in accordance with 40 CFR 60.4405; or
   b) If the permittee elects to monitor combustion parameters or parameters indicative of proper operation of $NO_X$ emission controls, the appropriate parameters must be continuously monitored and recorded during each run of the initial performance test, as specified in 40 CFR 60.4410 and 40 CFR 60.4355; or
   b) If EUTURBINE2-2 is also regulated under 40 CFR Part 75, with approval from the AQD District Supervisor, the permittee may monitor the $NO_x$ emission rate using the methodology in 40 CFR Part 75, Appendix E, or the low mass emissions methodology in 40 CFR 75.19, as described in 40 CFR 60.4340(b)(2)(iv).

   No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit 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. If a CEMS or AMS is being used, the permittee shall meet the timelines and requirements detailed in Appendix A. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.4340,**

**40 CFR 60.4400, 40 CFR 60.4405, 40 CFR 60.4410, 40 CFR Part 60 Subpart KKKK, 40 CFR Part 75 Appendix E)**

## VI. MONITORING/RECORDKEEPING

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), 40 CFR 60.4345)**

2. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for EUTURBINE2-2 on an hourly and monthly basis. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3))**

3. The permittee shall monitor and record, in a satisfactory manner, the status of the SoLoNO$_x$ operation on EUTURBINE2-2 for all operating hours on an hourly basis, in order to show compliance with SC III.4. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3))**

4. The permittee shall keep, in a satisfactory manner, a record of the date and time of each startup and shutdown event, and monthly and 12-month rolling total number of startup and shutdown events for EUTURBINE2-2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

5. If the permittee elects to utilize a CEMS or AMS for compliance with the NOx emission limits in SC I.1 and I.2, the permittee shall monitor and record hourly NO$_x$ mass emissions and 4-hour rolling unit operating hour average NOx concentration, for EUTURBINE2-2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(c) & (d), 40 CFR 60.4345)**

6. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling NO$_x$ mass emissions for EUTURBINE2-2. The permittee shall keep records of the basis of the calculations, including any product documentation from the turbine manufacturer used to determine emissions during startup and shutdown. **(R 336.1205(1)(a) & (3), 40 CFR 52.21(c) & (d))**

7. The permittee shall maintain records of all information necessary for all notifications and reports as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit for EUTURBINE2-2. This information shall include, but shall not be limited to the following:
   a) Compliance tests and any testing required under the special conditions of this permit;
   b) Monitoring data;
   c) Total sulfur content (gr/100 scf) and potential $SO_2$ emissions (lb/MMBtu) of the natural gas as required by 40 CFR 60.4365(a) or (b);
   d) Verification of heat input capacity as required by SC IV.1;
   e) Identification, type, and amount of fuel combusted on a calendar month basis as required by SC VI.2;
   f) All records required by 40 CFR 60.7;
   g) Records of the dates and times of startup and shutdown events;
   h) All calculations necessary to show compliance with the limits contained in this permit;
   i) All records related to, or as required by, the MAP and the startup and shutdown plan.

   All of the above information shall be stored in a format acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1331(1)(c), R 336.1702(a), R 336.1912, 40 CFR 60.7, 40 CFR 60.4365, 40 CFR Part 60 Subpart KKKK)**

## VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification

authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUTURBINE2-2. **(R 336.1201(7)(a))**

2. The permittee shall provide written notification of the date construction commences and the actual date of initial startup of EUTURBINE2-2, in accordance with 40 CFR 60.7. The permittee shall submit the notification(s) to the AQD District Supervisor within the time frames specified in 40 CFR 60.7 where applicable. **(40 CFR 60.7(a))**

3. If the permittee elects to use a CEMS or AMS to demonstrate compliance with NOx emission limits, the permittee shall submit excess emissions and monitor downtime reports required under 40 CFR 60.7(c) by the 30th day following the end of each 6-month period. **(40 CFR 60.7(c), 40 CFR 60.4375(a), 40 CFR 60.4380, 40 CFR 60.4395)**

## 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 |
|---|---|---|---|
| 1. SVTURBINE2-2 | 71.5 | 60 | R 336.1225, 40 CFR 52.21(c) & (d) |

## 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 and KKKK, as they apply to EUTURBINE2-2. **(40 CFR Part 60 Subparts A & KKKK)**

2. The permittee shall comply with all provisions of the federal National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines as specified in 40 CFR Part 63 Subparts A and YYYY, as they apply to EUTURBINE2-2. **(40 CFR Part 63 Subparts A & YYYY)**

**Footnotes:**

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

# EUAUXGEN3
# EMISSION UNIT CONDITIONS

## DESCRIPTION

Natural gas-fired SI emergency RICE rated at 4.8 MMBTU/hr (>500 hp) that commenced construction or reconstruction before December 19, 2002. This emission unit is subject to 40 CFR Part 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate and maintain EUAUXGEN3 in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by 40 CFR Part 63, Subpart ZZZZ have been achieved. **(40 CFR 63.6605(b))**

2. There is no time limit on the use of emergency stationary RICE in emergency situations. **(40 CFR 63.6640(f)(1))**

3. The permittee may operate EUAUXGEN3 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, the regional transmission organization or equivalent balancing authority and transmission operator, 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. **(40 CFR 63.6640(f)(2))**

4. EUAUXGEN3 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 as provided in SC III.4. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for the permittee to supply non-emergency power as part of a financial arrangement with another entity. **(40 CFR 63.6640(f)(3))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install a non-resettable hour meter on EUAUXGEN3. **(R 336.1213(3)(a)(ii))**

## 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 track hours of operation recorded by the non-resettable hour meter and document the number of hours spent for emergency and non-emergency operation per calendar year. The conditions present which classified the operation as an emergency shall also be described. **(R 336.1213(3)(a)(ii), 40 CFR 63.6640(f))**

## 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)

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, Subparts A and 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).

# EURULE285(2)(mm)
# EMISSION UNIT 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 285(2)(mm).

**Flexible Group ID:** NA

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. For venting of natural gas for routine maintenance or relocation of transmission and distribution systems in amounts greater than 1,000,000 standard cubic feet, the permittee shall, at a minimum, implement measures to assure safety of employees and the public and minimize impacts to the environment. **(R 336.1285(2)(mm)(ii)(B))**

## 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))**

NA

## VII. REPORTING

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

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

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

4. For venting of natural gas for routine maintenance or relocation of transmission and distribution systems in amounts greater than 1,000,000 standard cubic feet, the permittee shall notify the AQD District Supervisor prior to a scheduled pipeline venting. **(R 336.1285(2)(mm)(ii)(A))**

5. For venting of natural gas for routine maintenance or relocation of transmission and distribution systems in amounts greater than 1,000,000 standard cubic feet, the permittee shall provide necessary notification in accordance with the Michigan gas safety standards, the federal pipeline and hazardous materials safety administration standards, and the federal energy regulatory commission standards, as applicable. The permittee is not required to copy the AQD on the notifications. **(R 336.1285(2)(mm)(ii)(B))**

6. For emergency venting of natural gas in amounts greater than 1,000,000 standard cubic feet per event, the permittee shall notify the pollution emergency alert system (PEAS) within 24 hours of an emergency pipeline venting. For purposes of this requirement, an emergency is considered an unforeseen event that disrupts normal operating conditions and poses a threat to human life, health, property, or the environment if not controlled immediately. **(R 336.1285(2)(mm)(iv))**

**See Appendix 8**

## VIII. STACK/VENT RESTRICTION(S)

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).

## EUDEGREASER1
## EMISSION UNIT CONDITIONS

### DESCRIPTION

New cold cleaner placed into operation after July 1, 1979, with an air/vapor interface less than 10 square feet that is grandfathered or exempt from Rule 201 pursuant to Rule 278, Rule 278a and Rule 281(2)(h) or Rule 285(2)(r)(iv).

**Flexible Group ID:** NA

### POLLUTION CONTROL EQUIPMENT

NA

### I. EMISSION LIMIT(S)

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. 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

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. 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. 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

**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 SPECIAL 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 |
|---|---|---|
| FGCOMPRESSORS | Grandfathered natural gas-fired reciprocating internal combustion engines. | ~~EUENGINE306~~<br>~~EUENGINE316~~<br>~~EUENGINE319~~<br>~~EUENGINE320~~<br>EUENGINEH9<br>EUENGINEH10<br>EUENGINEH11<br>EUENGINEH12<br>EUENGINET11<br>EUENGINET12<br>~~EUENGINE3-1~~<br>~~EUENGINE3-2~~ |
| FGMACTYYYY | Requirements for stationary combustion turbines located at major sources of HAP emissions not using an oxidation catalyst | EUTURBINE2-2 |
| FGAUXGENS | Existing SI emergency RICE rated at <500 HP that commenced construction or reconstruction before June 12, 2006. The engines are subject to 40 CFR Part 63, Subpart ZZZZ. | EUAUXGEN1A<br>EUAUXGEN2A |
| FGPROCESSHTRS | Existing small (<10 MMBTU) industrial process heaters fired by natural gas at a major source of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD. | EUBLR9<br>EUFUELHTR<br>EUFUELHTR1<br>EUREBOILER |

# FGCOMPRESSORS
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Grandfathered natural gas fired reciprocating internal combustion engines.

**Emission Units:** ~~EUENGINE306, EUENGINE316, EUENGINE319, EUENGINE320~~, EUENGINEH9, EUENGINEH10, EUENGINEH11, EUENGINEH12, EUENGINET11, EUENGINET12, ~~EUENGINE3-1~~, ~~EUENGINE3-2~~

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only fire natural gas in the reciprocating compressor engines at this facility. **(R 336.1301(1))**

## 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 natural gas consumption rate for each calendar month. **(R 336.1213(3)(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. 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

**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).

# FGMACTYYYY
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

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Requirements for a stationary combustion turbines located at major sources of HAP emissions not using an oxidation catalyst

**Emission Unit:** EUTURBINE2-2

## POLLUTION CONTROL EQUIPMENT

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## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Formaldehyde | 91 ppbv at 15% oxygen except during startup[A] | Hourly | Each unit in FGMACTYYYY | SC V.1, SC V.2, SC IV.2 | 40 CFR 63.6100, 40 CFR Part 63 Subpart YYYY Table 1.1 |

[A] The period of time for startup is subject to the limits specified in the definition of startup 40 CFR 63.6175

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must operate and maintain each stationary combustion turbine, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions at all times. **(40 CFR 63.6105(c))**

2. The permittee shall comply with the emissions limitations, operating limitations, and other requirements in 40 CFR Part 63, Subpart YYYY at all times. **(40 CFR 63.6105(a))**

3. If the stationary combustion turbine is not equipped with an oxidation catalyst, the permittee must petition the USEPA for operating limitations that the permittee must monitor to demonstrate compliance with the formaldehyde emission limit in SC I.1. **(40 CFR 63.6120(e))**

4. If the stationary combustion turbine is not equipped with an oxidation catalyst and the permittee petition the USEPA for approval of additional operating limitation to demonstrate compliance with the formaldehyde emission limitation in SC I.1, the petition much include the following information **(40 CFR 63.6120(f))**:
   a) Identification of the specific parameters proposed to use as additional operating limitations;
   b) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with change in these parameters and how limitations on these parameters will serve to limit HAP emissions;
   c) A discussion on how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;
   d) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and
   e) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, maintain, and operate a device to measure the operating parameters from the petition in SC III.4 during the initial performance test and continuously monitor thereafter. **(40 CFR 63.6120(e), 40 CFR 63.6125(b))**

2. The permittee must demonstrate continuous compliance with SC I.1 and operating limitations in Table 1 and Table 2 according to methods specified in Table 5 of 40 CFR 63 Subpart YYYY. **(40 CFR 63.6140(a))**

## V. TESTING/SAMPLING

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

1. Not later than 120 calendar days after each unit becomes subject to 40 CFR 63 Subpart YYYY, the permittee shall conduct the initial performance test for formaldehyde emission rates from each unit by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in

| Pollutant | Test Method Reference |
|---|---|



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| | |
|---|---|
| Formaldehyde | Table 3 in 40 CFR Part 63 Subpart YYYY |

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit 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. **(40 CFR 63.6120, 40 CFR 6145(e), 40 CFR Part 63, Subpart YYYY, Tables 1 and 3)**

2. The permittee shall verify the formaldehyde emission rates from each emission unit annually as specified in Table 3 in 40 CFR Part 63 Subpart YYYY. **(40 CFR 63.6115)**

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## VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep the records as described in 40 CFR 63.6155(a), (c), and (d). **(40 CFR 63.6155(a), (c), and (d))**

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2. If the stationary combustion turbine is not equipped with an oxidation catalyst, the permittee must continuously monitor any parameter specified in the approved petition to the USEPA, in order to comply with the operating limitations in Table 2 and Table 5 in 40 CFR Part 63 Subpart YYYY. **(40 CFR 63.6125(b))**

3. The permittee must conduct all parametric monitoring at all times while the stationary combustion turbine is operating except during malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system). **(40 CFR 63.6135(a))**

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## VII. REPORTING

1. The permittee shall provide a written initial notification not later than 120 calendar days after the stationary combustion turbine becomes subject to 40 CFR 63 Subpart YYYY. The notification must include the information in 40 CFR 63.9(b)(2)(i) through (v) and a statement that your new or reconstructed stationary combustion turbine has no additional emission limitation requirements and must explain the basis of the exclusion. **(40 CFR 63.9(b), 40 CFR 63.6095(d), 40 CFR 63.6145)**

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2. The permittee shall submit applicable notifications specified in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), 40 CFR 63.8(f)(4), and 40 CFR 63.9(b) and (h). **(40 CFR 63.6145)**

3. The permittee shall submit all semiannual compliance reports and semiannual reports of monitoring and deviations from any emissions limitation or operation and maintenance requirement as required by 40 CFR 63.6150(a), (b), and (d). **(40 CFR 63.6150(a), (b), and (d))**

4. The permittee shall submit a Notification of Compliance Status according to 40 CFR 63.9(h)(2)(ii) for each performance test required to demonstrate compliance with the emission limitations for formaldehyde before the close of business on the 60th calendar day following the completion of the performance test. **(40 CFR 63.6145(f))**

5. The permittee must submit all performance test required by 40 CFR 63.6145(f) electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). **(40 CFR 63.6150(f))**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

The permittee shall comply with all provisions of the federal National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines as specified in 40 CFR Part 63 Subparts A and YYYY. **(40 CFR Part 63 Subparts A & YYYY)**

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# FGAUXGENS
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Existing SI emergency RICE rated at <500 HP that commenced construction or reconstruction before June 12, 2006. The engines are subject to 40 CFR Part 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

**Emission Units:** EUAUXGEN1A, EUAUXGEN2A

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Each engine in FGAUXGENS shall be installed, maintained, and operated in a satisfactory manner. The permittee may petition the USEPA Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices. The following are the work practices specified in 40 CFR Part 63, Subpart ZZZZ, Table 2c, Item 6:
   a. Change oil and filter every 500 hours of operation or annually, whichever comes first, except as allowed in SC III.2;
   b. Inspect the spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
   c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

   If the emergency engine is being operated during an emergency and it is not possible to shut down the engine to perform the work practice standards on the schedule required, the work practice standard can be delayed until the emergency is over. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has been abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, State or local law or which the risk was deemed unacceptable. **(40 CFR 63.6602, 40 CFR 63.6640(a), 40 CFR Part 63, Subpart ZZZZ, Table 2c, Item 6)**

2. The permittee may utilize an oil analysis program in order to extend the specified oil change requirement as specified in SC V.1. The oil analysis must be performed at the same frequency as oil changes are required. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c of 40 CFR Part 63, Subpart ZZZZ. **(40 CFR 63.6625(j))**

3. The permittee shall install, maintain, and operate each engine in FGAUXGENS according to the manufacturer's emission-related written instructions or a plan developed by the facility that provides to the extent practicable for

the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 63.6605(b), 40 CFR 63.6625(e), 40 CFR 63.6640(a), 40 CFR Part 63, Subpart ZZZZ, Table 6, Item 9)**

4. The permittee shall minimize the time spent at idle during startup and minimize the startup time of each engine in FGAUXGENS to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup apply. **(40 CFR 63.6625(h))**

5. There is no time limit on the use of emergency stationary RICE in emergency situations. **(40 CFR 63.6640(f)(1))**

6. The permittee may operate each engine in FGAUXGENS 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, the regional transmission organization or equivalent balancing authority and transmission operator, 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. **(40 CFR 63.6640(f)(2))**

7. Each engine in FGAUXGENS 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 as provided in SC III.6. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for the permittee to supply non-emergency power as part of a financial arrangement with another entity. **(40 CFR 63.6640(f)(3))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install a non-resettable hour meter on each engine in FGAUXGENS. **(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. If using the oil analysis program in order to extend the specified oil change requirement in 40 CFR Part 63, Subpart ZZZZ, Table 2c, the permittee must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not 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 or before commencing operation, whichever is later. The permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. **(40 CFR 63.6625(j))**

## 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 a copy of each notification and report submitted, including supporting documentation. **(40 CFR 63.6655(a)(1))**

2. For each engine in FGAUXGENS, the permittee shall keep in a satisfactory manner, records of the occurrence and duration of each malfunction of operation. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 63.6655(a)(2), 40 CFR 63.6660)**

3. For each engine in FGAUXGENS, the permittee shall keep in a satisfactory manner, records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunctioning process and monitoring equipment to its normal or usual manner of operation. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 63.6655(a)(5), 40 CFR 63.6660)**

4. For each engine in FGAUXGENS, the permittee shall keep in a satisfactory manner, records to demonstrate continuous compliance with the operating limitations in SC III.3. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 63.6655(d), 40 CFR 63.6660)**

5. For each engine in FGAUXGENS, the permittee shall keep in a satisfactory manner, records of all maintenance performed on the monitoring equipment and engine. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 63.6655(a)(4), 40 CFR 63.6655(e), 40 CFR 63.6660)**

6. For each engine in FGAUXGENS, the permittee shall monitor and record the total hours of operation per calendar year, recorded through the non-resettable hours meter, in a manner acceptable to the AQD District Supervisor. The permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation. **(40 CFR 63.6655(f))**

## VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii), 40 CFR 63.6640(b))**

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 annual and semiannual compliance reports must contain the following information: **(40 CFR 63.6650(c))**
   a. Company name and address;
   b. Statement by a Responsible Official, with that official's name, title, and signature, certifying the accuracy of the content of the report;
   c. Date of report and beginning and ending dates of the reporting period;
   d. If there was a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description of actions taken by an owner or operator during a malfunction to minimize emissions in accordance with SC III.3, including actions taken to correct a malfunction;
   e. If there are no deviations from any operating limitations that apply, a statement that there were no deviations from the operating limitations during the reporting period.

5. For each deviation from an operating limitation that occurs, the permittee shall include the following additional information in the compliance report: **(40 CFR 63.6650(d))**
   a. The total operating time of the stationary RICE at which the deviation occurred during the reporting period;

b. Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

**See Appendix 8**

## VIII. STACK/VENT RESTRICTION(S)

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, Subparts A and 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).

# FGPROCESSHTRS
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Existing small (<10 MMBTU) industrial process heaters fired by natural gas at a major source of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD.

**Emission Units:**

| | |
|---|---|
| ≤5 MMBTU/hr | EUFUELHTR (0.25 MMBTU/hr)<br>EUFUELHTR1 (0.45 MMBTU/hr)<br>EUBLR9 (3.35 MMBTU/hr)<br>EUREBOILER (1.00 MMBTU/hr) |

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must meet the tune-up and energy assessment work practice standards for each applicable boiler or process heater at the source. **(40 CFR 63.7500(a)(1), 40 CFR Part 63, Subpart DDDDD, Table 3, Nos. 1-4)**

2. The permittee must operate and maintain affected sources 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 AQD 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))**

3. The permittee may obtain approval from the Administrator to use an alternative to the tune-up and energy assessment work practice standards. **(40 CFR 63.7500(b))**

4. The permittee must:
   a. Conduct a 5-year performance tune-up for boilers/process heaters ≤5 MMBTU/hr, according to 40 CFR 63.7540(a)(12) as stated in SC III.5. 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))**
   b. Conduct the tune-up within 30 calendar days of startup, if the unit is not operating on the required date for a tune-up. **(40 CFR 63.7540(a)(13))**
   c. Follow the procedures in SC VI.1 for all initial and subsequent tune-ups. **(40 CFR 63.7540(a)(1), 40 CFR Part 63, Subpart DDDDD, Table 3)**

5. Boiler or process heaters with a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million BTU per hour and the unit is in the units designed to burn gas 1; units designed to burn gas 2 (other); or units designed to burn light liquid subcategories must conduct a tune-up of the boiler or process heater every 5 years. The burner inspection may be delayed until the next scheduled or unscheduled unit shutdown, but each burner must be inspected at least once every 72 months. **(40 CFR 63.7540(a)(12), 40 CFR 63.7500(d), 40 CFR 63.7500(e))**

6. The permittee must complete the initial tune ups on all affected units no later than January 31, 2016, except as provided in 40 CFR 63.7510(j) and 40 CFR 63.7540(a)(13). **(40 CFR 63.7510(e))**

7. For affected sources (as defined in 40 CFR 63.7490) 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 within 30 days of startup by following the procedures described in SC VI.1. **(40 CFR 63.7515(g))**

8. The permittee must complete the one-time energy assessment no later than January 31, 2016. The energy assessment must be performed by a qualified energy assessor and must include the following: **(40 CFR 63.7510(e), 40 CFR Part 63, Subpart DDDDD, Table 3, Item No. 4)**
   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 and 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 provides 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 for recouping those investments.

## 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 demonstrate continuous compliance with the tune-up requirement by completing the following: **(40 CFR 63.7540(a)(10))**
   a. 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))**

b. 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))**
c. 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). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection. **(40 CFR 63.7540(a)(10)(iii))**
d. 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))**
e. 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))**
f. Maintain on-site and submit, if requested by the AQD, the most recent periodic report containing the information as listed below. **(40 CFR 63.7540(a)(10)(vi))**
    i. 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 or process heater; **(40 CFR 63.7540(a)(10)(vi)(A))**
    ii. A description of any corrective actions taken as a part of the tune-up; **(40 CFR 63.7540(a)(10)(vi)(B))**
    iii. 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))**

2. The permittee must keep a copy 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 that the permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). **(40 CFR 63.7555(a)(1))**

3. 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. The permittee can keep the records off site for the remaining 3 years. **(40 CFR 63.7560(a), (b), and (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. 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 a Notification of Compliance Status that includes each boiler or process heater before the close of business on the 60th day following the completion of the initial compliance demonstrations for all boiler or process heaters at the facility. The Notification of Compliance Status report must contain the following information: **(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, description of the fuel(s) burned; **(40 CFR 63.7545(e)(1))**
b. 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))**

5. The permittee must submit boiler tune-up compliance reports. The first compliance report shall cover the period January 31, 2016 thru December of the year in which the tune up was completed and must be postmarked or submitted no later than March 15th of the reporting year that immediately follows the year in which the tune-up was completed. Subsequent compliance reports must be postmarked or submitted by March 15th of the year following the tune-up and must cover the applicable 1, 2, or 5-year period starting from January 1 of the year following the previous tune-up to December 31 (of the latest tune-up year). Compliance reports must be submitted using the Compliance and Emissions Data Reporting Interface (CEDRI) which is accessed through the EPA's Central Data Exchange (CDX) (*http://www.epa.gov/cdx*). If the reporting form is not available in CEDRI at the time the compliance report is due, a hardcopy of the compliance report shall be submitted to the state and EPA Region 5. At the discretion of the Administrator, the permittee must submit these reports, in the format specified by the Administrator. **(40 CFR 63.7550(b)**, **40 CFR 63.10(a)(5), 40 CFR 63.7550(h)(3))**

6. The permittee must include the following information in the compliance report: **(40 CFR 63.7550(c), 40 CFR 63.7550(c)(1))**
   a. Company and Facility name and address; **(40 CFR 63.7550(c)(5)(i))**
   b. Process unit information, emissions limitations, and operating parameter limitations; **40 CFR 63.7550(c)(5)(ii))**
   c. Date of report and beginning and ending dates of the reporting period; **(40 CFR 63.7550(c)(5)(iii))**
   d. The total operating time during the reporting period; **(40 CFR 63.7550(c)(5)(iv))**
   e. Include the date of the most recent tune-up for each unit. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown; **(40 CFR 63.7550(c)(5)(xiv))**
   f. Statement by a Responsible Official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report. **(40 CFR 63.7550(c)(5)(xvii))**

7. The permittee must report each instance in which the permittee did not meet each applicable operating limit in Tables 3 and 4 to 40 CFR Part 63, Subpart DDDDD. These instances are deviations from the operating limits, respectively, in 40 CFR Part 63, Subpart DDDDD. These deviations must be reported according to the requirements in 40 CFR 63.7550. **(40 CFR 63.7540(b))**

**See Appendix 8**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

1. The permittee must comply with 40 CFR Part 63, Subpart DDDDD no later than January 31, 2016, for existing boilers and process heaters, unless an extension has been granted per 40 CFR 63.6(i). **(40 CFR 63.7495(b))**

2. The permittee must be in compliance with the work practice standards (tune ups, energy assessment) in 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7505(a))**

3. The permittee shall comply with the General Provisions in 40 CFR 63.1 through 63.15 apply to this source as indicated in Table 10 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7565, Table 10)**

4. The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subparts A and DDDDD for Industrial, Commercial, and Institutional Boilers and Process Heaters. **(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).

## E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that the requirements identified in the table below are not applicable to the specified emission unit(s) and/or flexible group(s). This determination is incorporated into the permit shield provisions set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii). If the permittee makes a change that affects the basis of the non-applicability determination, the permit shield established as a result of that non-applicability decision is no longer valid for that emission unit or flexible group.

| Emission Unit/Flexible Group ID | Non-Applicable Requirement | Justification |
|---|---|---|
| EUTURBINERT248 | 40 CFR Part 60, Subpart GG | The turbine engine, EUTURBINERT248, at this facility is not subject to this subpart because it was constructed before October 3, 1977. 40 CFR Part 60, Subpart GG applies to certain stationary gas turbines which were constructed, modified, or reconstructed after October 3, 1977. The periodic repair or replacement of gas turbine components, including the gas generator, for overhaul or repair does not subject the facility to the requirements of Subpart GG unless the periodic replacement does meet the definition of "modification" as defined in 40 CFR 60.14 or "reconstruction" as defined in 40 CFR 60.15. Future modification and/or installation may be subject to this subpart. |
| FGCOMPRESSORS | 40 CFR Part 63, Subpart ZZZZ – NESHAPs for Stationary RICE | "…existing 2SLB or 4SLB stationary RICE, with a site rating of more than 500 BHP located at a major source of HAP emissions do not have to meet the requirements of this subpart and of Subpart A. Additionally, no initial notification was necessary." **(40 CFR 63.6590(b)(3)(i)&(ii))** If these units are reconstructed, or new units are installed, they may be subject to this subpart. |
| EUAUXGEN3<br>FGCOMPRESSORS | 40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE) | The existing engines were in operation prior to the regulatory applicability date, and none of the engines have been modified or reconstructed after June 12, 2006; therefore, these engines are not currently subject to this rule. |
| ~~EUENGINE306~~<br>~~EUENGINE316~~<br>~~EUENGINE319~~<br>~~EUENGINE320~~ | ~~40 CFR Part 63, Subpart ZZZZ – NESHAPs for Stationary RICE~~ | ~~"…(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:~~<br>~~(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions."~~<br>~~**(40 CFR 63.6590(b)(3)(iv))**~~ |
| EUTURBINERT248 | 40 CFR Part 63, Subpart YYYY | The turbine engine at this facility is not subject to this subpart because it was constructed before January 14, 2003. Pursuant to 40 CFR |

| Emission Unit/Flexible Group ID | Non-Applicable Requirement | Justification |
|---|---|---|
| | | 63.6090(b)(4), existing stationary combustion turbines in all subcategories do not have to meet the requirements of this subpart and of Subpart A of this part. Additionally, no initial notification was necessary. If the unit is reconstructed, or new units are installed, they may be subject to this subpart. |

# APPENDICES

## Appendix 1. Acronyms and Abbreviations

| 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 |
| CEMS | Continuous Emission Monitoring System | dscf | Dry standard cubic foot |
| CFR | Code of Federal Regulations | dscm | Dry standard cubic meter |
| COM | Continuous Opacity Monitoring | °F | Degrees Fahrenheit |
| Department/ department | Michigan Department of Environment, Great Lakes, and Energy | gr | Grains |
| | | HAP | Hazardous Air Pollutant |
| EGLE | Michigan Department of Environment, Great Lakes, and Energy | Hg | Mercury |
| | | hr | Hour |
| EU | Emission Unit | HP | Horsepower |
| FG | Flexible Group | $H_2S$ | Hydrogen Sulfide |
| GACS | Gallons of Applied Coating Solids | kW | Kilowatt |
| GC | General Condition | lb | Pound |
| GHGs | Greenhouse Gases | m | Meter |
| HVLP | High Volume Low Pressure* | mg | Milligram |
| ID | Identification | mm | Millimeter |
| IRSL | Initial Risk Screening Level | MM | Million |
| ITSL | Initial Threshold Screening Level | MW | Megawatts |
| LAER | Lowest Achievable Emission Rate | NMOC | Non-methane Organic Compounds |
| MACT | Maximum Achievable Control Technology | $NO_x$ | Oxides of Nitrogen |
| MAERS | Michigan Air Emissions Reporting System | ng | Nanogram |
| MAP | Malfunction Abatement Plan | PM | Particulate Matter |
| MSDS | Material Safety Data Sheet | PM10 | Particulate Matter equal to or less than 10 microns in diameter |
| NA | Not Applicable | | |
| NAAQS | National Ambient Air Quality Standards | PM2.5 | Particulate Matter equal to or less than 2.5 microns in diameter |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | pph | Pounds per hour |
| | | ppm | Parts per million |
| NSPS | New Source Performance Standards | ppmv | Parts per million by volume |
| NSR | New Source Review | ppmw | Parts per million by weight |
| PS | Performance Specification | % | Percent |
| PSD | Prevention of Significant Deterioration | psia | Pounds per square inch absolute |
| PTE | Permanent Total Enclosure | psig | Pounds per square inch gauge |

| | | | |
|---|---|---|---|
| PTI | Permit to Install | scf | Standard cubic feet |
| RACT | Reasonable Available Control Technology | sec | Seconds |
| ROP | Renewable Operating Permit | $SO_2$ | Sulfur Dioxide |
| SC | Special Condition | TAC | Toxic Air Contaminant |
| SCR | Selective Catalytic Reduction | Temp | Temperature |
| SNCR | Selective Non-Catalytic Reduction | THC | Total Hydrocarbons |
| SRN | State Registration Number | tpy | Tons per year |
| TEQ | Toxicity Equivalence Quotient | µg | Microgram |
| USEPA/EPA | United States Environmental Protection Agency | µm | Micrometer or Micron |
| | | VOC | Volatile Organic Compounds |
| VE | Visible Emissions | yr | Year |

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

### Appendix 2. Schedule of Compliance

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

### Appendix 3. Monitoring Requirements

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.

### Appendix 4. Recordkeeping

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

### Appendix 5. Testing Procedures

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

### Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-N2901-2014. 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-N2901-2014 is being reissued as Source-Wide PTI No. MI-PTI-N2901-2020.

| Permit to Install Number | ROP Revision Application Number | Description of Equipment or Change | Corresponding Emission Unit(s) or Flexible Group(s) |
|---|---|---|---|
| NA | NA | NA | NA |

## Appendix 7. Emission Calculations

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

**SC I.2 (40 CFR 63.1275, Equation 1)**

$$EL_{BTEX} = 3.10x10^{-4} * Throughput * C_{i,BTEX} * 365\frac{days}{yr} * \frac{1\ Mg}{1x10^{6} grams}$$

Where:
$EL_{BTEX}$ = Unit-specific BTEX emission limit, megagrams per year;
$3.10 \times 10^{-4}$ = BTEX emission limit, grams BTEX/standard cubic meter-ppmv;
Throughput = Annual average daily natural gas throughput, standard cubic meters per day;
$C_{i,BTEX}$ = Annual average BTEX concentration of the natural gas at the inlet to the glycol dehydration unit, ppmv.

**SC VI.2 (40 CFR 63.1270(a)(1))**

$$Throughput = \frac{8760}{(\frac{1}{IR_{max}} + \frac{1}{WR_{max}})}$$

Where:
Throughput = Maximum annual facility wide natural gas throughput in cubic meters per year
$IR_{max}$ = Maximum facility injection rate in cubic meters per hour
$WR_{max}$ = Maximum facility withdrawal rate in cubic meters per hour
8760 = Maximum hours of operation per year

## Appendix 8. Reporting

### A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use 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.

**From:** Amy D. Kapuga
**To:** EGLE-ROP
**Cc:** Benaway, Rachel (EGLE); McCann, Gina (EGLE); Avelock T. Robinson
**Subject:** N2901 ROP Renewal Application - Additional Information
**Date:** Tuesday, July 9, 2024 8:23:04 AM
**Attachments:** MRCS_N2901_ROP_Renewal_Application_Form-rev1.pdf
AI-001 PARTC_rev1.pdf



Attached is the additional information requested by EGLE-AQD, including

- MRCS_N2901_ROP_Renewal_Application_Form-rev1
  - C9. Does the source have any plans, such as a malfunction abatement plan, fugitive dust plan, operation/maintenance plan, or any other monitoring plan that is referenced in an existing ROP, Permit to Install requirement, or any other applicable requirement? Yes
    - EUGLYCDEHY: CPMS Monitoring Plan
    - EUTURBINE2-2: PM-MAP_SSM Plan
  - C10. Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable? - Yes

- AI-001 PARTC_rev1

Please let me know if you have any questions or require additional information.

Amy Kapuga, P.E. • Principal Environmental Engineer • Consumers Energy • EQ&S-Air Quality Section • 1945 W. Parnall Rd. Jackson, MI 49201 • P22-330 • 517-788-2201

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**From:** Irwin, Andrea (EGLE) <IrwinA1@michigan.gov>
**Sent:** Monday, July 8, 2024 3:37 PM
**To:** Avelock T. Robinson <AVELOCK.ROBINSON@cmsenergy.com>; Amy D. Kapuga <AMY.KAPUGA@cmsenergy.com>
**Cc:** Benaway, Rachel (EGLE) <BenawayR@michigan.gov>; McCann, Gina (EGLE) <McCannG2@michigan.gov>
**Subject:** N2901 App Admin Incomplete Letter

Please see attached letter regarding the ROP renewal application for Consumers Energy Company – Muskegon River Compressor Station.

Thank you,

Andrea Irwin
Michigan Department of Environment, Great Lakes, and Energy
Air Quality Division | Bay City District Office
Ph: 989-798-0782 | Environmental Assistance Center 800-662-9278

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) |
|---|---|---|---|---|
| N2901 | 4922 | 221210 | MI-ROP-N2901-2020 | |

Source Name: Consumers Energy Company – Muskegon River Compressor Station

Street Address: 8613 Pine Road

| City | State | ZIP Code | County |
|---|---|---|---|
| Marion | MI | 49665 | Clare |

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

Source Description: A natural gas compressor station. The primary function is to move natural gas into and out of underground storage reservoirs and along the intrastate natural gas pipeline system.

☐ 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) |
|---|---|
| Consumers Energy Company | |

Mailing address (☐ check if same as source address): One Energy Plaza

| City | State | ZIP Code | County | Country |
|---|---|---|---|---|
| Jackson | MI | 49201 | Jackson | 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: N2901 | Section Number (if applicable): |
|---|---|

## PART A: GENERAL INFORMATION (continued)

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

### CONTACT INFORMATION

| Contact 1 Name | | | Title | |
|---|---|---|---|---|
| Amy Kapuga | | | Principal Environmental Engineer | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| Consumers Energy Company, 1945 West Parnall Road, P22-330 | | | | |
| City | State | ZIP Code | County | Country |
| Jackson | MI | 49201 | Jackson | USA |
| Phone number | | E-mail address | | |
| 517-788-2201 | | AMY.KAPUGA@CMSENERGY.COM | | |

| Contact 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 | | |
| | | | | |

### RESPONSIBLE OFFICIAL INFORMATION

| Responsible Official 1 Name | | | Title | |
|---|---|---|---|---|
| Avelock Robinson | | | Director, Compression Operations | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| Consumers Energy Company, St. Clair Compressor Station, 10021 Marine City Highway | | | | |
| City | State | ZIP Code | County | Country |
| Ira Township | MI | 48023 | St. Clair | USA |
| Phone number | | E-mail address | | |
| 586-716-3326 | | AVELOCK.ROBINSON@CMSENERGY.COM | | |

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

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART B: APPLICATION SUBMITTAL and CERTIFICATION by Responsible Official

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

**Listing of ROP Application Contents. Check the box for the items included with your application.**

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

**Compliance Statement**

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

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

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

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

***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.***

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART C: SOURCE REQUIREMENT INFORMATION

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

| | | |
|---|---|---|
| C1. | Actual emissions and associated data from **all** emission units with applicable requirements (including those identified in the existing ROP, Permits to Install and other equipment that have not yet been incorporated into the ROP) are required to be reported in MAERS. Are there any emissions and associated data that have not been reported in MAERS for the most recent emissions reporting year? If Yes, identify the emission unit(s) that was/were not reported in MAERS on an AI-001 Form. Applicable MAERS form(s) for unreported emission units must be included with this application. | ☐ Yes ☒ No |
| C2. | Is this source subject to the federal regulations on ozone-depleting substances? (40 CFR Part 82) | ☐ Yes ☒ No |
| C3. | Is this source subject to the federal Chemical Accident Prevention Provisions? (Section 112(r) of the Clean Air Act Amendments, 40 CFR Part 68)<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 EGLE, 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>☐ Yes ☒ No<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-**PARTC

| SRN: N2901 | Section Number (if applicable): |
|---|---|

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

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

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

If No, go to Part E.

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

| **Emission Unit ID** | **Emission Unit Description** | **Rule 212(4) Citation** [e.g. Rule 212(4)(c)] | **Rule 201 Exemption Rule Citation** [e.g. Rule 282(2)(b)(i)] |
|---|---|---|---|
| EUBOILER1 | 0.4 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar KBN 400) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUBOILER2 | 0.4 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar KBN 400) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUBOILER10 | 0.5 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar Knight) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUBOILER11 | 0.5 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar Knight) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUBOILER12 | 0.5 MMBtu/hr natural gas-fired boiler for building heat (Lochinvar Knight) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUHEATER1 | 125,000 Btu/hr gas unit heater in Plant 3 Aux Building (comfort heat) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUHEATER2 | 125,000 Btu/hr gas unit heater in Plant 3 Aux Building (comfort heat) | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUSPACEHTRS | Eight (8) Natural gas-fired space heaters for building heat. Total combined capacity of 824,000 Btu/hr | Rule 212(4)(c) | Rule 282(2)(b)(i) |
| EUTANK10 | 1,000-gallon gasoline AST | Rule 212(4)(d) | Rule 284(2)(g)(i) |
| EUTANK12 | 2,900-gallon condensate/lube oil AST | Rule 212(4)(d) | Rule 284(2)(e) |
| EUTANK13 | 6,000-gallon TEG/water process tank (subgrade) | Rule 212(4)(d) | Rule 284(2)(i) |
| EUTANK19 | 5,000-gallon TEG AST | Rule 212(4)(d) | Rule 284(2)(i) |

Comments:

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART E: EXISTING ROP INFORMATION

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

| | |
|---|---|
| E1. Does the source propose to make any additions, changes or deletions to terms, conditions and underlying applicable requirements as they appear in the existing ROP?<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:

E.1 EUDEGREASER1 is an aqueous-based parts washer [exempt per Rule 281(2)(k)]. Pursuant to Rule 212(3)(b), the unit does not have to be included in the ROP or listed in the Staff Report.

E.4 EUENGINE306, EUENGINE316, EUENGINE319, EUENGINE320, EUENGINE3-1 and EUENGINE3-2 were all disconnected from the fuel gas system (retired in place) as of 9/20/2020 and should be removed from the ROP

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART F: PERMIT TO INSTALL (PTI) INFORMATION

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

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

| Permit to Install Number | Emission Units/Flexible Group ID(s) | Description (*Include Process Equipment, Control Devices and Monitoring Devices*) | Date Emission Unit was Installed/ Modified/ Reconstructed |
|---|---|---|---|
| PTI 16-21A | EUTURBINE2-2<br>FGMACTYYYY | Natural gas-fired Solar Taurus 70 turbine that is equipped with dry low-NOx combustion control ($SoLoNO_x$). | 2/9/2022 |
| | | | |
| | | | |
| | | | |

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-**PARTF

| SRN: N2901 | Section Number (if applicable): |
|---|---|

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

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

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

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

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

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

Comments:

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

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## PART H: REQUIREMENTS FOR ADDITION OR CHANGE

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

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

| | | |
|---|---|---|
| H1. Are there changes that need to be incorporated into the ROP that have not been identified in Parts F and G? If Yes, answer the questions below. | ☒ Yes | ☐ No |
| H2. Are there any proposed administrative changes to any of the existing emission unit names, descriptions or control devices in the ROP? If Yes, describe the changes in questions H8 – H16 below and in the affected Emission Unit Table(s) in the mark-up of the ROP. | ☐ Yes | ☒ No |
| H3. Does the source propose to add a new emission unit or flexible group to the ROP not previously identified in Parts F or G? If Yes, identify and describe the emission unit name, process description, control device(s), monitoring device(s) and applicable requirements in questions H8 – H16 below and in a new Emission Unit Table in the mark-up of the ROP. See instructions on how to incorporate a new emission unit/flexible group into the ROP. | ☐ Yes | ☒ No |
| H4. Does the source propose to add new state or federal regulations to the existing ROP?<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: N2901 | Section Number (if applicable): |
|---|---|

## 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.<br><br>Delete requirements for EUDEGREASER1 | ☒ 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.<br><br>Delete requirements for EUDEGREASER1 | ☒ 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.<br><br>Delete requirements for EUDEGREASER1 | ☒ 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.<br><br>Delete requirements for EUDEGREASER1 | ☒ 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.<br><br>Delete requirements for EUDEGREASER1 | ☒ Yes ☐ No |

| SRN: N2901 | Section Number (if applicable): |
|---|---|

## 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: N2901 | Section Number (if applicable): |
|---|---|

1. Additional Information ID
**AI-**PARTC

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

C4 Criteria Pollutant PTE Calculations

C5 HAP PTE Calculations

C9 EUGLYCDEHY CPMS Monitoring Plan
EUTURBINE2-2 PM-MAP_SSM Plan

C10 Non-Applicable Requirements

| Emission Unit/ Flexible Group ID | Non-Applicable Requirement | Justification |
|---|---|---|
| EUTURBINERT248 | 40 CFR Part 60, Subpart GG | The turbine engine, EUTURBINERT248, at this facility is not subject to this subpart because it was constructed before October 3, 1977. 40 CFR Part 60, Subpart GG applies to certain stationary gas turbines which were constructed, modified, or reconstructed after October 3, 1977. The periodic repair or replacement of gas turbine components, including the gas generator, for overhaul or repair does not subject the facility to the requirements of Subpart GG unless the periodic replacement does meet the definition of "modification" as defined in 40 CFR 60.14 or "reconstruction" as defined in 40 CFR 60.15. Future modification and/or installation may be subject to this subpart. |
| EUTURBINERT248 | 40 CFR Part 63, Subpart YYYY | The turbine engine at this facility is not subject to this subpart because it was constructed before January 14, 2003. Pursuant to 40 CFR 63.6090(b)(4), existing stationary combustion turbines in all subcategories do not have to meet the requirements of this subpart and of Subpart A of this part. Additionally, no initial notification was necessary. If the unit is reconstructed, or new units are installed, they may be subject to this subpart. |
| EUAUXGEN3 FGCOMPRESSORS | 40 CFR Part 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE) | The existing engines were in operation prior to the regulatory applicability date, and none of the engines have been modified or reconstructed after June 12, 2006; therefore, these engines are not currently subject to this rule. |
| FGCOMPRESSORS | 40 CFR Part 63, Subpart ZZZZ – NESHAPs for Stationary RICE | "…existing 2SLB or 4SLB stationary RICE, with a site rating of more than 500 BHP located at a major source of HAP emissions do not have to meet the requirements of this subpart and of Subpart A. Additionally, no initial notification was necessary." **(40 CFR 63.6590(b)(3)(i)&(ii))** If these units are reconstructed, or new units are installed, they may be subject to this subpart. |

# Muskegon River Compressor Station (N2901)
## Criteria Pollutants PTE Calculations

| Equipment | No. of Units | Fuel | Size | Units | Size | Units | Make/Model | Controls | Criteria Pollutant | Emission Factor | EF Units | Source | PTE (lb/hr) | PTE (tpy) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EUTURBINERT248 | 1 | Natural Gas | 88.7 | MMBtu/hr | 10,500 | HP | Pratt & Whitney GG3C-1<br>Cooper Bessemer RFB-24 | | CO | 8.20E-02 | lb/MMBtu | AP-42, Table 3.1-2a | 7.27 | 31.86 |
| | | | | | | | | | $NO_x$ | 1.30E-01 | lb/MMBtu | AP-42, Table 3.1-2a | 11.53 | 50.51 |
| | | | | | | | | | VOC | 2.10E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.19 | 0.82 |
| | | | | | | | | | PM | 6.60E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.59 | 2.56 |
| | | | | | | | | | PM10 | 1.90E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.17 | 0.74 |
| | | | | | | | | | PM2.5 | 4.70E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.42 | 1.83 |
| | | | | | | | | | $SO_2$ | 3.40E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.30 | 1.32 |
| EUTURBINE2-2 | 1 | Natural Gas | 96.5 | MMBtu/hr | 11,419 | HP | Solar Taurus 70 | SoLoNOx | CO | 0.056 | lb/MMBtu | Vendor | 5.404 | 23.67 |
| | | | | | | | | | $NO_x$ | 0.055 | lb/MMBtu | Vendor | 5.3075 | 23.25 |
| | | | | | | | | | VOC | 0.009 | lb/MMBtu | Vendor | 0.8685 | 3.80 |
| | | | | | | | | | PM | 6.60E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.6369 | 2.79 |
| | | | | | | | | | PM10 | 1.90E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.18335 | 0.80 |
| | | | | | | | | | PM2.5 | 4.70E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.45355 | 1.99 |
| | | | | | | | | | $SO_2$ | 3.40E-03 | lb/MMBtu | AP-42, Table 3.1-2a | 0.3281 | 1.44 |
| H COMPRESSORS (Engine H9, Engine H10, Engine H11 & Engine H12) | 4 | Natural Gas | 21 | MMBtu/hr | 2,600 | HP | Clark HBA10 | | CO | 3.86E-01 | lb/MMBtu | AP-42, Table 3.2-1 | 32.42 | 142.02 |
| | | | | | | | | | $NO_x$ | 3.17E+00 | lb/MMBtu | AP-42, Table 3.2-1 | 266.28 | 1,166.31 |
| | | | | | | | | | VOC | 1.20E-01 | lb/MMBtu | AP-42, Table 3.2-1 | 10.08 | 44.15 |
| | | | | | | | | | PM | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 3.23 | 14.13 |
| | | | | | | | | | PM10 | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 3.23 | 14.13 |
| | | | | | | | | | PM2.5 | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 3.23 | 14.13 |
| | | | | | | | | | $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42, Table 3.2-1 | 0.05 | 0.22 |
| T COMPRESSORS (Engine T11 & Engine T12) | 2 | Natural Gas | 24 | MMBtu/hr | 3,400 | HP | Clark TLA-10 | | CO | 3.86E-01 | lb/MMBtu | AP-42, Table 3.2-1 | 18.53 | 81.15 |
| | | | | | | | | | $NO_x$ | 3.17E+00 | lb/MMBtu | AP-42, Table 3.2-1 | 152.16 | 666.46 |
| | | | | | | | | | VOC | 1.20E-01 | lb/MMBtu | AP-42, Table 3.2-1 | 5.76 | 25.23 |
| | | | | | | | | | PM | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 1.84 | 8.07 |
| | | | | | | | | | PM10 | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 1.84 | 8.07 |
| | | | | | | | | | PM2.5 | 3.84E-02 | lb/MMBtu | AP-42, Table 3.2-1 | 1.84 | 8.07 |
| | | | | | | | | | $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42, Table 3.2-1 | 0.03 | 0.12 |
| FGAUXGENS (Aux Gen 1A & Aux Gen 2A) | 2 | Natural Gas | 3.8 | MMBtu/hr | | | | | CO | 3.72E+00 | lb/MMBtu | AP-42, Table 3.2-3 | 28.27 | 123.83 |
| | | | | | | | | | $NO_x$ | 2.21E+00 | lb/MMBtu | AP-42, Table 3.2-3 | 16.80 | 73.57 |
| | | | | | | | | | VOC | 2.96E-02 | lb/MMBtu | AP-42, Table 3.2-3 | 0.22 | 0.99 |
| | | | | | | | | | PM | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.07 | 0.32 |
| | | | | | | | | | PM10 | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.07 | 0.32 |
| | | | | | | | | | PM2.5 | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.07 | 0.32 |
| | | | | | | | | | $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42, Table 3.2-3 | 0.004 | 0.02 |
| EUAUXGEN3 | 1 | Natural Gas | 4.8 | MMBtu/hr | | | | | CO | 3.72E+00 | lb/MMBtu | AP-42, Table 3.2-3 | 17.86 | 78.21 |
| | | | | | | | | | $NO_x$ | 2.21E+00 | lb/MMBtu | AP-42, Table 3.2-3 | 10.61 | 46.46 |
| | | | | | | | | | VOC | 2.96E-02 | lb/MMBtu | AP-42, Table 3.2-3 | 0.14 | 0.62 |
| | | | | | | | | | PM | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.05 | 0.20 |
| | | | | | | | | | PM10 | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.05 | 0.20 |
| | | | | | | | | | PM2.5 | 9.50E-03 | lb/MMBtu | AP-42, Table 3.2-3 | 0.05 | 0.20 |
| | | | | | | | | | $SO_2$ | 5.88E-04 | lb/MMBtu | AP-42, Table 3.2-3 | 0.003 | 0.01 |
| EUBLR9 | 1 | nat gas | 3.35 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.28 | 1.21 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.33 | 1.44 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.02 | 0.08 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.02 | 0.11 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.02 | 0.11 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.02 | 0.11 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.009 |
| EUFUELHTR | 1 | nat gas | 0.25 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.02 | 0.09 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.02 | 0.11 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.001 | 0.01 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.01 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.01 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.01 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.0001 | 0.001 |

## Muskegon River Compressor Station (N2901)
## Criteria Pollutants PTE Calculations

| Equipment | No. of Units | Fuel | Size | Units | Size | Units | Make/Model | Controls | Criteria Pollutant | Emission Factor | EF Units | Source | PTE (lb/hr) | PTE (tpy) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EUFUELHTR1 | 1 | nat gas | 0.45 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.04 | 0.16 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.04 | 0.19 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.002 | 0.01 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.003 | 0.01 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.003 | 0.01 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.003 | 0.01 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.0003 | 0.001 |
| EUREBOILER | 1 | nat gas | 1 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.08 | 0.36 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.10 | 0.43 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.02 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.03 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.03 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.03 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.001 | 0.00 |
| TO (combustion) | 1 | nat gas | 1.5 | MMBtu/hr | | | | None | CO | 84 | lb/MMCF | AP-42, Table 1.4-1 | 0.12 | 0.54 |
| | | | | | | | | | $NO_x$ | 100 | lb/MMCF | AP-42, Table 1.4-1 | 0.15 | 0.64 |
| | | | | | | | | | VOC | 5.5 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.04 |
| | | | | | | | | | PM | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.05 |
| | | | | | | | | | PM10 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.05 |
| | | | | | | | | | PM2.5 | 7.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.01 | 0.05 |
| | | | | | | | | | $SO_2$ | 0.6 | lb/MMCF | AP-42, Table 1.4-2 | 0.001 | 0.00 |
| EUGLYCDEHY | | | | | | | | | VOC | GRI-GLYCalc | | | 2.60 | 11.41 |
| | | | | | | | | | | | | **CO PTE** | | 483.10 |
| | | | | | | | | | | | | **$NO_x$ PTE** | | 2,029.36 |
| | | | | | | | | | | | | **VOC PTE** | | 87.17 |
| | | | | | | | | | | | | **PM PTE** | | 28.28 |
| | | | | | | | | | | | | **PM10 PTE** | | 24.47 |
| | | | | | | | | | | | | **PM2.5 PTE** | | 26.74 |
| | | | | | | | | | | | | **$SO_2$ PTE** | | 3.15 |

**Muskegon River Compressor Station (N2901)**
**HAP PTE Calculations**

| Equipment | No. of Units | Fuel | Size | Units | Size | Units | Make/Model | Controls | HAP | Emission Factor | EF Units | Source | HAP Emissions (lb/hr) | HAP Emissions (tpy) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EUTURBINERT248 | 1 | Natural Gas | 88.7 | MMBtu/hr | 10,500 | HP | Pratt & Whitney GG3C-1<br><br>Cooper Bessemer RFB-24 | None | **Formaldehyde** | 7.10E-04 | lb/MMBtu | AP-42 Table 3.1-3 | 0.06 | 0.28 |
| | | | | | | | | | Acrolein | 6.40E-06 | lb/MMBtu | AP-42 Table 3.1-3 | 0.001 | 0.002 |
| | | | | | | | | | Acetaldehyde | 4.00E-05 | lb/MMBtu | AP-42 Table 3.1-3 | 0.004 | 0.02 |
| | | | | | | | | | Benzene | 1.20E-05 | lb/MMBtu | AP-42 Table 3.1-3 | 0.001 | 0.00 |
| | | | | | | | | | Toluene | 1.30E-04 | lb/MMBtu | AP-42 Table 3.1-3 | 0.01 | 0.05 |
| EUTURBINE2-2 | 1 | Natural Gas | 96.5 | MMBtu/hr | 11,419 | HP | Solar Taurus 70 | SoLoNOx | **Formaldehyde** | 7.10E-04 | lb/MMBtu | AP-42 Table 3.1-3 | 0.07 | 0.30 |
| | | | | | | | | | Acrolein | 6.40E-06 | lb/MMBtu | AP-42 Table 3.1-3 | 0.001 | 0.003 |
| | | | | | | | | | Acetaldehyde | 4.00E-05 | lb/MMBtu | AP-42 Table 3.1-3 | 0.004 | 0.02 |
| | | | | | | | | | Toluene | 1.20E-05 | lb/MMBtu | AP-42 Table 3.1-3 | 0.001 | 0.01 |
| | | | | | | | | | Benzene | 1.30E-04 | lb/MMBtu | AP-42 Table 3.1-3 | 0.01 | 0.05 |
| H COMPRESSORS (Engine H9, Engine H10, Engine H11 & Engine H12) | 4 | Natural Gas | 21 | MMBtu/hr | 2,600 | HP | Clark HBA10 | None | **Formaldehyde** | 5.52E-02 | lb/MMBtu | AP-42 Table 3.2-1 | 4.64 | 20.31 |
| | | | | | | | | | Acrolein | 7.78E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.65 | 2.86 |
| | | | | | | | | | Acetaldehyde | 7.76E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.65 | 2.86 |
| | | | | | | | | | Methanol | 2.48E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.21 | 0.91 |
| | | | | | | | | | Benzene | 1.94E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.16 | 0.71 |
| T COMPRESSORS (Engine T11 & Engine T12) | 2 | Natural Gas | 24 | MMBtu/hr | 3,400 | HP | Clark TLA-10 | None | **Formaldehyde** | 5.52E-02 | lb/MMBtu | AP-42 Table 3.2-1 | 2.65 | 11.61 |
| | | | | | | | | | Acrolein | 7.78E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.37 | 1.64 |
| | | | | | | | | | Acetaldehyde | 7.76E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.37 | 1.63 |
| | | | | | | | | | Methanol | 2.48E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.12 | 0.52 |
| | | | | | | | | | Benzene | 1.94E-03 | lb/MMBtu | AP-42 Table 3.2-1 | 0.09 | 0.41 |
| FGAUXGENS (Aux Gen 1A & Aux Gen 2A) | 2 | Natural Gas | 3.8 | MMBtu/hr | | | | None | **Formaldehyde** | 2.05E-02 | lb/MMBtu | AP-42 Table 3.2-3 | 0.16 | 0.68 |
| | | | | | | | | | Acrolein | 2.63E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.02 | 0.09 |
| | | | | | | | | | Acetaldehyde | 2.79E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.02 | 0.09 |
| | | | | | | | | | Methanol | 3.06E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.02 | 0.10 |
| | | | | | | | | | Benzene | 1.58E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.05 |
| EUAUXGEN3 | 1 | Natural Gas | 4.8 | MMBtu/hr | | | | None | **Formaldehyde** | 2.05E-02 | lb/MMBtu | AP-42 Table 3.2-3 | 0.10 | 0.43 |
| | | | | | | | | | Acrolein | 2.63E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.06 |
| | | | | | | | | | Acetaldehyde | 2.79E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.06 |
| | | | | | | | | | Methanol | 3.06E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.06 |
| | | | | | | | | | Benzene | 1.58E-03 | lb/MMBtu | AP-42 Table 3.2-3 | 0.01 | 0.03 |
| EUBLR9 | 1 | nat gas | 3.35 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.01 | 0.03 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0002 | 0.001 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.00001 | 0.00003 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000004 | 0.00002 |
| EUFUELHTR | 1 | nat gas | 0.25 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0004 | 0.002 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.00002 | 0.0001 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000001 | 0.000002 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0000003 | 0.000001 |
| EUFUELHTR1 | 1 | nat gas | 0.45 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0008 | 0.003 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.00003 | 0.0001 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000001 | 0.000004 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0000005 | 0.000002 |
| EUREBOILER | 1 | nat gas | 1 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.002 | 0.008 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.00007 | 0.0003 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000002 | 0.000009 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000001 | 0.000005 |
| TO (combustion) | 1 | nat gas | 1.5 | MMBtu/hr | | | | None | Hexane | 1.8 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.003 | 0.012 |
| | | | | | | | | | **Formaldehyde** | 7.50E-02 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.0001 | 0.0005 |
| | | | | | | | | | Benzene | 2.10E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000003 | 0.000014 |
| | | | | | | | | | Dichlorobenzene | 1.20E-03 | lb/$10^6$ scf | AP-42 Table 1.4-3 | 0.000002 | 0.000008 |
| EUGLYCDEHY | TEG Glycol Dehydration System | | | | | | | | BTEX | Permit Limit | | | 1.68 | 7.38 |
| | | | | | | | | | Heptanes | GRI-GLYCalc | | | 1.46 | 6.40 |
| | | | | | | | | | Hexanes | GRI-GLYCalc | | | 0.32 | 1.40 |
| | | | | | | | | | | | | **SINGLE HAP (FORMALDEHYDE) PTE** | | 33.61 |
| | | | | | | | | | | | | **TOTAL HAP PTE** | | 61.08 |

Consumers Energy

*A CMS Energy Company*

# 40 CFR 63 Subpart HHH
# Site-Specific Monitoring Plan for
# Glycol Dehydration System
# Continuous Parameter Monitoring System (CPMS)

Consumers Energy Company
Muskegon River Compressor Station (N2901)
Marion, Michigan

April 24, 2013

Revised: April 13, 2015
June 11, 2015
October 14, 2015
January 27, 2020
February 27, 2024

*1945 W. Parnall Road • Jackson, MI 49201 • Fax: 517 788 2329 • www.consumersenergy.com*

| Monitoring Plan Revision History[1] | | | |
|---|---|---|---|
| **Revision No.** | **Revised By** | **Revision Date** | **Comments (e.g. Description of Revisions)** |
| 0 | AD Kapuga | April 24, 2013 | Draft |
| 1 | AD Kapuga | April 13, 2015 | Draft |
| 2 | AD Kapuga | June 11, 2015 | Added site-specific information |
| 3 | AD Kapuga | October 14, 2015 | Added comments from Ron Austin and Parish Geers |
| 4 | AD Kapuga | January 17, 2020 | Updated based on periodic performance test |
| 5 | AD Kapuga | February 27, 2024 | Updated based on periodic performance test |

[1]Revisions must be retained for 5 years from the date of the revision.

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## 1.0 Glycol Dehydration Unit Inspection & Monitoring Plan Overview

Facility: Muskegon River Compressor Station

Physical Address: 8613 Pine Road, Marion, MI

### 1.1 Regulatory Requirement

The facility is subject to Subpart HHH of 40 CFR 63 [National Emission Standard for Hazardous Air Pollutants (NESHAP) from Natural Gas Transmission and Storage Facilities], which establishes control, monitoring, recordkeeping and reporting requirements for glycol dehydration units. For each small glycol dehydration unit process vent, the owner or operator shall limit benzene, toluene, ethylbenzene and xylene (BTEX) emissions to the limit determined using the following equation:

$$EL_{BTEX} = 3.10\text{x}10^{-4} \times \text{Throughput} \times C_{i,BTEX} \times \frac{365 \text{ days}}{\text{yr}} \times \frac{1 \text{ Mg}}{1\text{x}10^{6} \text{ grams}}$$

Where:

| | | |
|---|---|---|
| $EL_{BTEX}$ | = | Unit-specific BTEX emission limit, megagrams per year |
| $3.10\text{x}10^{-4}$ | = | BTEX emission limit, grams BTEX/standard cubic meter-ppmv |
| Throughput | = | Annual average daily natural gas throughput, standard cubic meters per day |
| $C_{i,BTEX}$ | = | Annual average BTEX concentration of the natural gas at the inlet to the glycol dehydration unit, ppmv |

$$\text{EUGLYCDEHY} = 3.10\text{x}10^{-4} \times 1{,}914{,}886 \times 31 \times 365 \times 0.000001 = 6.7 \text{ Mg/yr}$$

This calculated limit must be met in accordance with one of the following:

- Connect the process vent to a control device, or combination of control devices, through a closed-vent system
- Meet the emissions limit through process modifications
- Meet the emissions limit using a combination of process modifications and one or more control devices
- Demonstrate that the emissions limit is met through actual uncontrolled operation

The glycol dehydration process vent at Muskegon River Compressor Station is connected to a control device (thermal oxidizer) through a closed-vent system. For each control device, a continuous parameter monitoring system (CPMS) must be installed and operating.

The primary monitoring requirements are defined in §63.1283(d) of Subpart HHH. Additional requirements are defined in the General Provisions (part 63, Subpart A). §63.1283(d)(1)(ii) requires a site-specific monitoring plan for the CPMS that monitors the thermal oxidizer combustion chamber temperature to ensure compliance with a specified temperature operating limit. The monitoring plan must address the monitoring system design, data collection, and the quality assurance and quality control elements.

### 1.2 Definitions

The following definitions apply:

Closed-Vent System: A system that is not open to the atmosphere and is composed of piping, ductwork, connections, and if necessary, flow inducing devices that transport gas or vapor from an emission point to one or more control devices. If gas or vapor from regulated equipment is routed to a process (e.g., to a fuel gas system), the conveyance system shall not be considered a closed-vent system and is not subject to closed-vent system standards.

Continuous Recorder: A data recording device that either records an instantaneous data value at least once every hour or records hourly or more frequent block average values.

Malfunction: A malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. This definition is provided for information only. Operations should consult with the Field Leader to determine whether or not a malfunction has occurred due to any unit alarm or shutdown for purposes related to the Maximum Achievable Control Technology (MACT) rules.

Safety Device: A device that meets both of the following conditions: the device is not used for planned or routine venting of liquids, gases, or fumes from the unit or equipment on which the device is installed; and the device remains in a closed, sealed position at all times except when an unplanned event requires that the device open for purpose of preventing physical damage or permanent deformation of the unit or equipment on which the device is installed in accordance with good engineering and safety practices for handling flammable, combustible, explosive, or other hazardous materials. Examples of unplanned events which may require a safety device to open include failure of an essential equipment component or a sudden power outage.

Shutdown: The cessation of operation of a glycol dehydration unit for purposes including, but not limited to: periodic maintenance, replacement of equipment, or repair.

Small glycol dehydration unit: A glycol dehydration unit, located at a major source, with an actual average natural gas flowrate less than 283.0 thousand standard cubic meters per day or actual annual average benzene emissions less than 0.90 Mg/yr.

Startup: Setting into operation of a glycol dehydration unit. Startup includes initial startup and operation solely for the purpose of testing equipment.

Temperature Monitoring Device: An instrument used to monitor temperature and having a minimum accuracy of ±2 percent of the temperature being monitored expressed in °C, or ±2.5 °C, whichever is greater. The temperature monitoring device may measure temperature in degrees Fahrenheit or degrees Celsius, or both.

A CPMS is out-of-control if:

The CPMS fails a performance test audit, relative accuracy audit, relative accuracy test audit, or linearity test audit.

## 2.0 Affected Sources and Associated CPMS Equipment

This section provides information on the affected emission units and the associated CPMS instrumentation and equipment. The CPMS Monitoring Plan must include monitoring system design specification and equipment performance criteria for the sample interface, detector signal analyzer, and data acquisition and calculations.

### 2.1 Affected Sources Description

Consumers Energy's Muskegon River Compressor Station (N2901) is a natural gas compression station. The purpose of the facility is to maintain pressure of natural gas in order to move it in and out of storage reservoirs and along the pipeline system. There is one (1) affected source (glycol dehydration unit) installed at the station that are used to remove moisture from natural gas withdrawn from the storage fields, as follows:

| Emission Unit ID | Emission Controls |
|---|---|
| EUGLYCDEHY | Thermal Oxidizer |

### 2.2 Control Equipment Requirements

The closed-vent system shall route all gases, vapors, and fumes to a control device that meets all of the following criteria:

- Designed and operated with no detectable emissions
- If the closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors or fumes from entering the control device, you must meet the following:
  - *At the inlet to the bypass device, properly install, calibrate, maintain and operate a flow indicator that is capable of taking periodic readings and sounding an alarm when the bypass device is open;* ***or***
  - *Secure the bypass device valve in the non-diverting position using a car-seal or a lock-and-key type configuration*
  - *Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines and safety devices are not subject to this requirement*

EUGLYCDEHY does not contain any bypass devices.

## 2.3 Inspection & Monitoring

Required Inspections

Each closed-vent system shall be inspected as follows:

- For joints, seams, or other connections that are permanently or semi-permanently sealed:

  - Conduct an initial inspection to demonstrate that the closed-vent system operates with no detectable emissions

  - Report inspection results with the Notification of Compliance Status Report

  - Conduct annual visual inspections for defects that could result in air emissions (ie: visible cracks, holes or gaps in piping; loose connections; broken or missing caps or other closure devices)

  - In addition, for components other than those listed above, conduct annual inspections to demonstrate that the components or connections operate with "no detectable emissions".

  - Report inspection results in the Periodic Report

Required Monitoring

Install, calibrate, operate & maintain a temperature monitoring device, equipped with a continuous recorder, to measure the combustion chamber temperature for each thermal oxidizer.

- Establish a minimum operating parameter value to define the conditions at which the control device must be operated to continuously achieve the applicable performance requirements.

| Emission Unit ID | Minimum Thermal Oxidizer Operating Temperature °F |
|---|---|
| EUGLYCDEHY | 1170 |

- Using data recorded by the monitoring system, calculate the daily average for each monitored operating parameter for each operating day

## 2.4 System Design Considerations

The purpose of the CPMS is to:

- Continuously monitor the combustion chamber temperature of the thermal oxidizer.
- Record the temperature at least once every 15 minutes.
- Average the data on a block-hour.
- Calculate a daily average based on the block-hour data.

### 2.4.1 Temperature Measurement Device Specifications

The following specifications apply to the temperature measurement devices:

| Parameter | Specification |
|---|---|
| Location | The temperature sensor shall be installed at a location representative of the combustion zone temperature. |
| Device Type | Thermocouple |
| Tolerance | ±2 percent of the temperature being monitored in °C, or ±2.5 °C, whichever value is greater [63.1283(d)(3)(i)(A)] |

### 2.4.2 Data Acquisition System

The Supervisory Control and Data Acquisition (SCADA) system uses Programmable Logic Controller (PLC) to monitor and control systems. The PLC takes a signal from the thermocouple, located in the combustion chamber temperature of the thermal oxidizer, and converts it to engineering units to be sent to the HMI's and to the SCADA computer. A Historian computer is connected to the SCADA network using Ethernet. A XL Reporter program resides on the Historian computer.

The XL Reporter provides the following readouts:

- 15-minute snapshot temperature readings
- 1-hour average temperatures
- Daily average temperatures

In the event of a failure of the Historian computer, or the network connection, a chart recorder is used as a redundant backup.

### 2.4.3 Reporting System

The Historian PC with reporting software is connected to the SCADA network. The reporting software is used to collect data from the PLC, collate into a report for printing, and for long-term retention of the data.

## 3.0 Temperature Monitoring System Performance Evaluation and Periodic QA/QC Procedures

### 3.1 Periodicity

The requirements for periodic audits consist of equipment requirements and procedural requirements. All equipment has to be calibrated and meet general requirements for accuracy: (1) An accuracy hierarchy of at least three, and (2) an accuracy that is NIST-traceable. An exception to the accuracy requirements for instruments that are used to audit the accuracy of the CPMS is when performing an accuracy audit using a redundant sensor, the redundant sensor would have to have an accuracy equal to or better than the accuracy of the primary sensor.

A factory calibrated unit was installed on each of the units. The calibration certification sheets, or other appropriate documentation, shall be retained demonstrating factory calibration. Annual audits of the CPMS shall be conducted as described below.

### 3.2 Methodology

The performance of the temperature CPMS (thermocouple) will be validated by using an Ametek Jofra Temperature Calibrator, or equivalent.

#### 3.2.1 Calibration

Test equipment will be calibrated using the listed standards which are traceable to the International System of Units through the National Institute of Standards. The calibration of the thermocouple and SCADA shall be done in accordance with manufacturer's recommendations and company policies and procedures. A written work order documenting steps to be followed shall be used.

#### 3.2.2 Accuracy

The accuracy criteria for the validation check is ±2 percent of the temperature being monitored in °C, or ±2.5 °C (36.5°F), whichever value is greater [63.1283(d)(3)(i)(A)]. The thermal oxidizer combustion chamber temperature is required to be maintained above the established operating condition. Therefore, the system accuracy criterion for the CPMS is ±2 percent of the temperature being monitored.

### 3.3 Notification

Notification to MDEQ prior to conducting the performance evaluation or with results after testing is not required.

### 3.4 Documentation

Closeout of the work order shall be considered sufficient documentation provided factory calibration sheets, field readings, and/or other results, as appropriate, are included in the closeout comments or attached to the work order.

### 3.5 Malfunctioning CPMS

Operation of the unit while troubleshooting a malfunction of the CPMS is acceptable. Possible indications of a malfunction include, but are not limited to:

- Temperatures out of range (high or low)
- Failure to generate daily printouts of the logs
- Erroneous or nonsensical data on the printed logs
- Failure of the visual display of temperatures from the SCADA

#### 3.5.1 Recordkeeping and Reporting

Logs documenting the malfunction of the CPMS, immediate actions and corrective actions shall be taken in accordance with Section 5.3 of this plan. Additionally, the Environmental Department shall be notified immediately of the malfunction.

#### 3.5.2 Troubleshooting a Malfunctioning CPMS

Muskegon River shall troubleshoot the CPMS according with the manufacturer's recommendations, company policy and procedures and good operating practices.

## 4.0 CPMS Operation and Maintenance

### 4.1 CPMS Operation

The CPMS will be in continuous operation whenever the monitored glycol dehydrator operates. Data will be collected as follows:

- Record the thermal oxidizer combustion chamber temperature at least once every 15 minutes including startup, shutdown and malfunction periods
- Average the 15-minute data on an hourly basis.
- Calculate the daily average for each operating day.
- Compare the daily average to the minimum operating parameter value.

Alarms and shutdowns shall be provided as follows:

- The CPMS shall alarm when the thermal oxidizer combustion chamber temperature reaches 1380°F decreasing or 1800°F increasing.
- The unit will shut down if the thermal oxidizer combustion chamber temperature exceeds 1800°F.

### 4.2 CPMS Maintenance

#### 4.2.1 Preventative Maintenance

CPMS maintenance will be conducted in according with company policy and procedures. Additionally, daily station walkdowns take place to check on obvious signs of physical failure of the equipment.

#### 4.2.2 Corrective Maintenance

Corrective maintenance will be conducted according to manufacturer's recommendations, company policy and procedures, and good operating practices, in a manner consistent with safety and good air pollution control practices for minimizing emissions in the event of a CPMS malfunction, impending malfunction, or out-of-control CPMS. In lieu of conducting immediate corrective maintenance, operations may shutdown the associated engine until such time as corrective maintenance can be performed.

### 4.3 Spare Parts

A set list of spare parts of the CPMS will not be maintained in inventory. If a spare part for the system is not available when needed, the affected equipment will be shut down until such time as the necessary spare part can be procured and installed.

## 5.0 Data Management

### 5.1 Valid Data

Valid data is defined as data not "recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities". Specifically, valid data is comprised of:

- 15-minute readings
- Hourly averages consisting of valid 15-minute readings
- Daily averages consisting of valid hourly averages

### 5.2 Data Review

Operations shall review the CPMS daily reports to:

- Confirm all required data was collected
- Identify any data collected that was not valid data, as defined above
- Confirm that no exceedances of the average daily temperature limits occurred

Missing data may be recovered by:

- Forcing a new printout
- Recover data from SCADA/PLC
- Chart recorder

If missing data is unrecoverable (e.g., due to power failure), exceedances are identified, or non-valid data is identified, the Environmental Services Department shall be notified immediately. Additionally, in the event of repeated instances of missing data, whether recoverable or unrecoverable, over a short duration of time, an investigation as to the causes is to be conducted.

### 5.3 Recordkeeping

The following records collected by the CPMS are required to be retained for a period of five years. At a minimum, the most recent two-year data shall be available on site. The other three years data may be stored off site, but should be accessible within a reasonable time. These records can be retained either electronically, via hard copy, or both, and shall be easily accessible.

- Each daily average
- Each hourly average used to calculate the daily average values
- Each 15-minute data point used to calculate hourly averages
- The algorithm/calculation procedure used to reduce data
- All readings taken during periods of CPMS breakdowns and out-of-control periods

Additionally, documentation of the following shall be retained regarding the CPMS:

- The date and time identifying each period during which the CPMS was inoperative
- The date and time identifying each period during which the CPMS was out-of-control
- The date and time of commencement and completion of each time period where the CMPS daily average temperature was out of the specified limits in this plan
- The nature and cause of any malfunction (if known)
- The corrective action taken or preventative measures adopted
- The nature of the repairs or adjustments to the CPMS that was inoperative or out of control
- The total process operating time during the reporting period
- Documentation of any QA/QC procedures performed for CPMS

## 5.4 Reports

### 5.4.1 Daily Data Reports

A daily report for each unit shall be generated and printed after midnight for the previous calendar day. The report shall include, at a minimum, the following:

- Each 15-minute data sample of the thermal oxidizer combustion chamber temperature
- Hourly averages of the thermal oxidizer combustion chamber temperature
- Daily averages of the thermal oxidizer combustion chamber temperature

### 5.4.2 Compliance Reports

The following compliance notifications/reports are required:

- Immediate notifications of non-compliance
- Semiannual reports and annual compliance reports
- Notification of malfunctioning and out-of-control CPMS events
- Notification of intent to conduct performance test
- Notification of compliance status at the completion of performance tests

## 6.0 PROGRAM OF CORRECTIVE ACTION FOR A MALFUNCTIONING CPMS

The CPMS (thermocouple and SCADA system) is required to measure thermal oxidizer combustion chamber temperature. This temperature must be monitored continuously at all times the glycol dehydration units are operating.

*NOTE: Malfunction events do not include events caused, in part, by poor maintenance or careless operation.*

Possible Malfunction Events**:**

- SCADA failure
- Thermocouple Not Working

SCADA Failure

Event Definition: The Supervisory Control and Data Acquisition (SCADA) system uses Programmable Logic Controller (PLC) to monitor and control systems. The PLC takes a signal from the thermocouple, located in the combustion chamber temperature of the thermal oxidizer, and converts it to engineering units to be sent to the HMI's and to the SCADA computer. A Historian computer is connected to the SCADA network using Ethernet. In the event of a failure of the Historian computer, or the network connection, a chart recorder is used as a redundant backup.

**Event Procedures:**

If the SCADA System is not working, restore system operation as soon as practical. Procedures for this event may include:

- Record date & time of event beginning.
- Troubleshoot per manufacturer's recommendations and company policies and procedures, including reinstallation of software, inspection/repair of power or communications connections and wiring, if required.
- Confirm restoration of data acquisition system operation. Record date & time of event ending
- Complete log and prepare Inlet Temperature Event Checklist to document actions taken to respond to this malfunction.

Thermocouple Not Working or Working Improperly

Event Definition: Thermocouple not working, or working improperly

**Event Procedures:**

If the thermocouple is not working or working improperly, restore system operation as soon as practical. Procedures for this event may include:

- Record date & time of event beginning.
- Thermocouple input failure will be logged
- Conduct troubleshooting per manufacturer's instructions.
- Identify required adjustment, repair, or replacement, per manufacturer instructions and company policies and procedures. Complete required actions.
- Thermocouples cannot be calibrated. Once replaced, the new thermocouple will be checked for accuracy by using the standard thermocouple testing method (refer to Sections 3.2 and 3.2.1).
- Repair information will be on the inlet temperature event checklist

# ATTACHMENT 1

# CPMS Event Checklist

**Combustion Chamber Temperature Event Checklist**

**Completed by:**_____ **Date:**_____

**Type of Event:**

- ☐ **Thermocouple Not Working**
- ☐ **Other*** _____

**Thermocouple Not Working**

- **Date & Time Noted TC Not Working:** _____
- **Data & Time Last Data Recorded:** _____
- **Date & Time Recorder Operation Restored:** _____
- **Reason for Recorder Failure, if known:** _____

_____

_____

- **Did you follow manufacturer's procedures for troubleshooting?** ☐ **YES** ☐ **NO***
- **Did you repair or replace the data recorder?** ☐ **REPAIR** ☐ **REPLACE**
- **Did you re-calibrate per manufacturer procedures?** ☐ **YES** ☐ **NO***

**Other*:**

**Describe what happened:**

_____

_____

_____

**When did this event begin:** _____

**When did this event end:** _____

**Describe the actions you took to respond:**

_____

_____

_____

_____

*** If "other" or "NO" there may be immediate reporting requirements.**
**Contact** _____ **immediately at** _____ **(tel)**
**and fax this form to:** _____ **(fax)** _____

Consumers Energy
Count on Us

August 3, 2022

Mr. Chris Hare, District Supervisor
**Michigan Department of Environment, Great Lakes, and Energy**
**Bay City District Office - Air Quality Division**
401 Ketchum Street, Suite B
Bay City, MI 48708

**Re: Consumers Energy Company's Muskegon River Compressor Station (SRN: N2901)**

Dear Mr. Hare:

Pursuant to the requirements of Permit to Install (PTI) 16-21 for Consumers Energy Company's Muskegon River Compressor Station, enclosed is the Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) and Startup, Shutdown, Malfunction SSM) Plan for EUTURBINE2-2.

If you have any questions, or require additional information, please feel free to contact me at 517-788-2201 or amy.kapuga@cmsenergy.com.

Sincerely,

Amy D. Kapuga

Amy D. Kapuga
Senior Environmental Engineer
Environmental Services-Air Quality

cc: Parish Geers, Field Leader-Muskegon River Compressor Station
Janet Simon, Sr. Field Leader-Muskegon River Compressor Station
Muskegon River Compressor Station Compliance File

Consumers Energy

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# Preventative Maintenance/Malfunction Abatement Plan (PM/MAP)

# and

# Startup/Shutdown/Malfunction (SSM) Plan

## Muskegon River Compressor Station

## Natural Gas-Fired Turbine

## (EUTURBINE2-2)

AUGUST 2022

# Table of Contents



# Attachments



# Appendices

## 1.0 Background

R 336.1911 and PTI 16-21 (EUTURBINE2-2-III.1) require the development of a Malfunction Abatement Plan ("MAP"). Rule 911 states that all sources of air contaminants must prepare a MAP to prevent, detect, and correct malfunctions or failures resulting in excess emissions. In addition, PTI 16-21 (EUTURBINE2-2_III.2) requires the development of a plan that describes how emissions will be minimized during startup and shutdown [i.e., Startup, Shutdown and Malfunction (SSM) Plan]. The MAP and SSM Plan are also used to describe the documentation and reporting requirements when a malfunction occurs. This MAP and SSM Plan have been developed, in accordance with Rule 911 and PTI 16-21, for Muskegon Compressor Station's new natural gas-fired turbine.

## 2.0 Description of System

Muskegon River's equipment includes a natural gas-fired Solar Taurus 70-10802S turbine-driven compressor unit, rated at a maximum heat input of 96.5 million British thermal units per hour (mmBtu/hr, calculated on a Higher Heating Value, or HHV, basis). The new turbine will be used to drive a centrifugal compressor, which recompresses the natural gas. Increasing the pressure of the natural gas creates the energy needed to move the gas through the system. The new turbine will have a simple cycle design and will be equipped with dry low-emissions (DLE) technology, referred to as SoLoNO$_x$ to maintain stable combustion and minimize the formation of nitrogen oxides (NO$_x$), carbon monoxide (CO), and unburned hydrocarbon (UHC) emissions. Emissions of $SO_2$ and PM/$PM_{10}$/$PM_{2.5}$ will be minimized through the use of pipeline quality natural gas, as well as efficient combustion controls.

# 3.0 Preventative Maintenance Program

## 3.1 Responsible Personnel

The Sr. Field Leader is responsible for ensuring that the Muskegon River Compressor Station operates in compliance with all environmental and safety requirements and regulations. The Sr. Field Leader delegates day-to-day responsibilities for gas compressor station operations and maintenance to the Field Leader.

The Field Leader is responsible for overseeing the inspection, maintenance, and repair of the turbine, and is responsible for all operations at the plant.

Contact Information:

| | |
|---|---|
| Janet Simon, Sr. Field Leader | 231-388-2717 |
| Parish Geers, Field Leader | (231) 743-4101 |
| Shane Higgins, Station Engineer | (231) 743-4103 |
| Pierce Dehring, Reliability Engineer | 517-257-8496 |

## 3.2 Maintenance Inspections

Planned preventative maintenance activities and inspections are captured within SAP Maintenance Plans, which are developed based on recommended practices within the OEM Installation, Operation, and Maintenance (IOM) Manual and within the Consumers Energy Gas Operations Manual. Maintenance activities may be triggered for completion on either a calendar basis or an operating basis. SAP is the repository for all maintenance plans and maintenance logs related to this new natural gas-fired turbine.

# 4.0 Monitoring Requirements

Daily inspections of the system include an inspection of the control panel to check for failed or alarm conditions. The system is equipped with the following alarms:

1. Fuel system temperature and pressure
2. System vibration
3. Shaft bearing temperature

4. SoLoNO$_x$ system monitoring
5. Lube system temperature and level
6. Differential pressure across the compressor seals

## 5.0 Corrective Action Procedures

Precautionary measures to minimize excess emissions from the turbine will be implemented when it is experiencing a malfunction. These precautionary measures may include the following:

- If the malfunction results in turbine shutdown, determine the cause of the malfunction using the Control Panel or the Operators Manual located in the Control Room to diagnose the malfunction and identify the appropriate corrective action. Critical alarms will also have an associated Alarm Response Procedure (ARP) that operators can use to determine steps for investigation and troubleshooting.
- If the malfunction does not result in turbine shutdown, determine the cause of the malfunction. If there is a potential for excess emissions, call the Environmental Contact for the compressor station to determine if the turbine should be shut down for environmental purposes
- Notify the appropriate responsible station manager or supervisor of the malfunction so manufacturer/service representative may be contacted as necessary
- Table 1 outlines Startup/Shutdown/Malfunction activities and actions to take depending on the situation. In most cases, when there is a malfunction, the turbine will automatically shut down

All malfunctions must be fully documented by completion of the Startup, Shutdown & Malfunction (SSM) Event Form contained in Appendix A. If prompted by the Event Form, the operator must also notify Environmental Department personnel.

# ATTACHMENT

# TABLE 1

**Table 1**
**Startup, Shutdown and Malfunction Events**
**Muskegon River Compressor Station**

| Solar Taurus 70-10802S | Action | Response | Documentation (form in Appendix A) |
|---|---|---|---|
| **Startup**: Automated or manual startup procedure | **Successful Operation**<br>• Turbine follows startup sequence. Startup is obtained when unit reaches 400°<br>• Display on operator screen will show unit is in SoLoNO$_x$ mode | | |
| | **Unsuccessful Operation**<br>• Turbine stops before reaching startup temperature<br>• SoLoNOx system is not operating properly | • Initiate Emergency Shut Down (ESD) of the turbine<br>• Investigate and determine cause of the problem prior to attempting restart of the unit<br>• Notify site manager or supervisors on site of potential problem<br>• If required, contact Solar to have rep. come out and fix the problem.(Call should be made by site manager or supervisor). | Startup, Shutdown, and Malfunction Event Form |
| **Shutdown**: Automated or manual shutdown procedure | **Successful Operation**<br>• Manual: turbine stops<br>• Automatic: turbine stops | | |
| | **Unsuccessful Operation**<br>• Turbine does not follow shutdown procedure provided by the manufacturer | • Investigate and determine cause of the problem prior to attempting restart of the unit<br>• Notify site manager or supervisors on site of potentialproblem | Startup, Shutdown, and Malfunction Event Form |
| **Malfunction** | • Significant operational deviation, such as resulting from fire, lightning strike/sever weather, or other Force Majeure event | • If the malfunction results in turbine shutdown, investigate and determine cause of the problem prior to attempting restart of the unit..<br>• If the malfunction does not result in turbine shutdown, determine the cause of the malfunction. If there is a potential for excess emissions, call the Environmental Contact for the Compressor Station to determine if the turbine should be shut down for environmental purposes.<br>• Notify the Field Leader of the SSM event | Startup, Shutdown, and Malfunction Event Form |
| **Malfunction** | • Alarm code for unit out of SoLoNOx mode. | • Shut down turbine and determine cause of problem usingthe Operators Manual in the Control Room<br>• Notify site manager or supervisors on site of potential problem<br>• Contact Solar to have representative come out and fix the problem (call should be made by site manager or supervisor) | Startup, Shutdown and Malfunction Event Form |

# APPENDIX A

# BLANK FORMS

## STARTUP, SHUTDOWN, AND MALFUNCTION EVENT FORM

To be completed for each SSM Event and retained for a period of five (5) years

Completed By: _____

Completion Date: _____

Location and Unit _____

Type of Event: check appropriate box

☐Startup
☐Shutdown
☐Malfunction, describe: _____

_____

_____

**Time/Duration of Event:**

Date & Start Time of Event:_____

Date & End Time of Event: _____

Duration of Event: _____

**Actions Taken to Minimize Event:**

| | | |
|---|---|---|
| Were steps taken to immediately correct malfunction? | ☐ Yes | ☐ No* |
| Were steps taken to minimize emissions from event? | ☐ Yes | ☐ No* |
| Were monitoring and control systems in operation? | ☐ Yes | ☐ No* |
| Were actions taken consistent with the SSM Plan / MAP? (If no, complete the SSM Report Form) | ☐ Yes | ☐ No* |

Please describe actions taken during SSM event and all reasons for answering **No** below:

_____

_____

_____

_____

_____

_____

**Evaluation of Malfunction Event:**

Did SSM Plan/ MAP provide adequate procedures to address event? ☐ Yes ☐ No*

If **No,** provide recommendations for revision of SSM Plan / MAP in the spaces provided below.

_____

_____

If **No,** was an evaluation of the root cause of the malfunction made? ☐ Yes ☐ No*

If **Yes,** describe results of evaluation in space provided below.

_____

_____

If No, provide reasons for not performing evaluation in space provided below:

_____

_____

# APPENDIX B

# COMPLETED FORMS