

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

June 18, 2003

PERMIT TO INSTALL

281-00A

ISSUED TO

B.O.P. Federal Correctional Institution

LOCATED AT

4004 East Arkona Road
Milan, Michigan

IN THE COUNTY OF

Washtenaw

STATE REGISTRATION NUMBER

K2688

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. 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: April 30, 2003 | |
| DATE PERMIT TO INSTALL APPROVED: June 18, 2003 | SIGNATURE: |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

| Common Acronyms | | Pollutant/Measurement Abbreviations | |
|-----------------|---|-------------------------------------|--|
| AQD | Air Quality Division | Btu | British Thermal Unit |
| ANSI | American National Standards Institute | °C | Degrees Celsius |
| BACT | Best Available Control Technology | CO | Carbon Monoxide |
| CAA | Clean Air Act | dscf | Dry standard cubic foot |
| CEM | Continuous Emission Monitoring | dscm | Dry standard cubic meter |
| CFR | Code of Federal Regulations | °F | Degrees Fahrenheit |
| COM | Continuous Opacity Monitoring | gr | Grains |
| EPA | Environmental Protection Agency | Hg | Mercury |
| EU | Emission Unit | hr | Hour |
| FG | Flexible Group | H ₂ S | Hydrogen Sulfide |
| GACS | Gallon of Applied Coating Solids | hp | Horsepower |
| GC | General Condition | lb | Pound |
| HAP | Hazardous Air Pollutant | m | Meter |
| HVLP | High Volume Low Pressure * | mg | Milligram |
| ID | Identification | mm | Millimeter |
| LAER | Lowest Achievable Emission Rate | MM | Million |
| MACT | Maximum Achievable Control Technology | MW | Megawatts |
| MAERS | Michigan Air Emissions Reporting System | NO _x | Oxides of Nitrogen |
| MAP | Malfunction Abatement Plan | PM | Particulate Matter |
| MDEQ | Michigan Department of Environmental Quality | PM-10 | Particulate Matter less than 10 microns diameter |
| MIOSHA | Michigan Occupational Safety & Health Administration | pph | Pound per hour |
| MSDS | Material Safety Data Sheet | ppm | Parts per million |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | ppmv | Parts per million by volume |
| NSPS | New Source Performance Standards | ppmw | Parts per million by weight |
| NSR | New Source Review | psia | Pounds per square inch absolute |
| PS | Performance Specification | psig | Pounds per square inch gauge |
| PSD | Prevention of Significant Deterioration | scf | Standard cubic feet |
| PTE | Permanent Total Enclosure | sec | Seconds |
| PTI | Permit to Install | SO ₂ | Sulfur Dioxide |
| RACT | Reasonable Available Control Technology | THC | Total Hydrocarbons |
| SC | Special Condition Number | tpy | Tons per year |
| SCR | Selective Catalytic Reduction | µg | Microgram |
| SRN | State Registration Number | VOC | Volatile Organic Compounds |
| TAC | Toxic Air Contaminant | yr | Year |
| VE | Visible Emissions | | |

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

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. **[R336.1201(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 Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **[R336.1201(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 R336.1210, 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. **[R336.1201(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. **[R336.1201(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 R336.1219 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 R336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **[R336.1219]**
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. **[R336.1901]**
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 conditions 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). **[R336.1912]**
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 R336.1301, 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 R336.1303. **[R336.1301]**
 - 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 R336.1370(2). **[R336.1370]**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

SPECIAL CONDITIONS

Emission Unit Identification

| Emission Unit ID | Emission Unit Description | Stack Identification |
|---|--|-----------------------------|
| EU-BOILER1 | 10.46 MM BTU/hr natural gas/diesel-fired boiler | SV-BOILER1 |
| EU-BOILER2 | 29.30 MM BTU/hr natural gas/diesel-fired boiler | SV-BOILER2 |
| EU-BOILER3 | 29.30 MM BTU/hr natural gas/diesel-fired boiler | SV-BOILER3 |
| EU-GENERATOR1 | Kohler Mod. 1000ROZD-4, Diesel-fired, 1020 KW, MMBTU/Hr. | SV-GEN1 |
| EU-GENERATOR2 | Kohler Mod. 1000ROZD-4, Diesel-fired, 1020 KW, MMBTU/Hr. | SV-GEN2 |
| Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290. | | |

Flexible Group Identification

| Flexible Group ID | Emission Units Included in Flexible Group | Stack Identification |
|--------------------------|--|-----------------------------|
| FG-BOILERS | EU-BOILER1, EU-BOILER2, and EU-BOILER3 | N/A |
| FG-GENERATORS | EU-GENERATOR1 and EU-GENERATOR2 | N/A |
| FG-FACILITY | All equipment at the facility including equipment covered by other permits, grand-fathered equipment and exempt equipment. | N/A |

The following conditions apply to: FG-BOILERS

Emission Limits

| | Pollutant | Equipment | Limit | Time Period | Testing/ Monitoring Method | Applicable Requirement |
|------|------------------|------------------|----------------------------|--|---|--|
| 1.1a | NOx | FG-BOILERS | 0.024 lb per gallon Diesel | Test Protocol | SC 1.6 | R336.1205 (1)(a) and (3) |
| 1.1b | NOx | FG-BOILERS | 100 lbs per MMSCF Nat. Gas | Test Protocol | SC 1.6 | R336.1205 (1)(a) and (3) |
| 1.1c | NOx | FG-BOILERS | 29.7 tpy | 12-Month rolling time period as determined at the end of each calendar month | See "Compliance Method" below and SC 1.9 | R336.1205 (1)(a) and (3), 40 CFR 52.21 (c) & (d) |

| Pollutant | Equipment | Limit | Time Period | Testing/ Monitoring Method | Applicable Requirement |
|--|-----------|-------|-------------|----------------------------------|---------------------------|
| <p><u>Compliance Method:</u></p> $\frac{(EF_{\text{Diesel}}) * (\text{Gallons diesel/month}) + (EF_{\text{gas}}) * (\text{MMSCF gas/month})}{2000} = \text{tons NOx/month}$ <p>Where:</p> <p>EF_{Diesel} = lb NOx per gallon Diesel; Use SC 1.1a, or most recent stack test results as determined by the AQD.</p> <p>EF_{Gas} = lb NOx per MMSCF Natural Gas; Use SC 1.1b, or most recent stack test results as determined by the AQD.</p> | | | | | |

Material Usage Limits

1.2 The sulfur content of the fuel oil shall not exceed 0.05 percent, by weight. [R336.1401]

Process/Operational Limits

1.3 The permittee shall not operate FG-BOIELRS unless an acceptable plan that describes how emissions will be minimized during all startups, shutdowns and malfunctions has been submitted to the AQD District Supervisor. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. [R336.1911, R336.1912]

Testing

1.4 Within 180 days after commencement of trial operation, verification of NO_x emission rates from FG-BOILERS using both natural gas and diesel, by testing at owner's expense, in accordance with Department requirements will be required. Testing No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. [R336.1205 (1)(a) and (3), R336.2001, R336.2003, R336.2004, 40 CFR 52.21 (c) & (d)]

Monitoring

1.5 The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the natural gas and diesel usage for FG-BOILERS on a monthly basis. [R336.1205 (1)(a) and 3) , R336.1225, R336.1702(a),40 CFR 52.21 (c) & (d)]

Recordkeeping/Reporting/Notification

- 1.6 All records shall be completed and made available by the 15th day of each calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. [R336.1201(3)]
- 1.7 The permittee shall keep, in a satisfactory manner, monthly and previous 12-month natural gas and diesel usage records. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1205(1)(a) and 3), R336.1225, R336.1702(a), 40 CFR 52.21(c) & (d)]

- 1.8 The permittee shall keep records of the sulfur content, in percent by weight, for each fuel oil shipment. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1401]**
- 1.9 The permittee shall keep monthly and previous 12-month NOx calculation records for FG-BOILERS. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205 (1)(a) and (3), 40 CFR 52.21 (c) & (d)]**

Stack/Vent Restrictions

| | Stack & Vent ID | Maximum Diameter (inches) | Minimum Height Above Ground Level (feet) | Applicable Requirement(s) |
|---|----------------------------|----------------------------------|---|-----------------------------------|
| 1.10a | SV-BOILER1 | 24 | 31 | R336.1225, 40 CFR 52.21 (c) & (d) |
| 1.10b | SV-BOILER2 | 24 | 31 | R336.1225, 40 CFR 52.21 (c) & (d) |
| 1.10c | SV-BOILER3 | 20 | 31 | R336.1225, 40 CFR 52.21 (c) & (d) |
| The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air. | | | | |

The following conditions apply to: FG-GENERATORS

Emission Limits

| | Pollutant | Equipment | Limit | Time Period | Testing/ Monitoring Method | Applicable Requirement |
|------|------------------|------------------|---------------------|--|-----------------------------------|---|
| 2.1a | NOx | FG-GENERATORS | 0.604 lb per gallon | Test Protocol | SC 2.4 | R336.1205 (1)(a) and (3) |
| 2.1b | NOx | FG-GENERATORS | 52.3 tpy | 12-Month rolling time period as determined at the end of each calendar month | SC 2.1a, SC 2.3, SC 2.4, SC 2.6 | R336.1205 (1)(a) and (3) , 40 CFR 52.21 (c) & (d) |

Material Usage Limits

- 2.2 The sulfur content of the fuel oil shall not exceed 0.05 percent, by weight. **[R336.1401]**

Process/Operational Limits

- 2.3 The permittee shall not operate FG-GENERATORS for more than a combined total of 2400 hours per 12-month rolling time period as determined at the end of each calendar month. **[R336.1205(1)(a) and (3), R336.1225, R336.1702 (a) , 40 CFR 52.21 (c) & (d)]**

Testing

2.4 Within 180 days after commencement of trial operation, verification of NO_x emission rates from FG-GENERATORS, by testing at owner's expense, in accordance with Department requirements will be required. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. [R336.1205 (1)(a) and (3), R336.2001, R336.2003, R336.2004, 40 CFR 52.21 (c) & (d)]

Monitoring

2.5 The permittee shall monitor in a satisfactory manner the hours of operation for FG-GENERATORS on a monthly basis. [R336.1205(1)(a) and (3), R336.1225, R336.1702 (a) , 40 CFR 52.21 (c) & (d)]

Recordkeeping/Reporting/Notification

2.6 All records shall be completed and made available by the 15th day of each calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. [R336.1201(3)]

2.7 The permittee shall keep, in a satisfactory manner, monthly and previous 12-month NO_x emission calculation records for FG-GENERATORS. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1205(1)(a) and (3) , 40 CFR 52.21 (c) & (d)]

2.8 The permittee shall keep records of the sulfur content, in percent by weight, for each fuel oil shipment. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1401]

2.9 The permittee shall keep, in a satisfactory manner, a written log of the monthly hours of operation of FG-GENERATORS. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1205(1)(a) and (3), R336.1225, R336.1702(a) , 40 CFR 52.21 (c) & (d)]

Stack/Vent Restrictions

| | Stack & Vent ID | Maximum Diameter (inches) | Minimum Height Above Ground Level (feet) | Applicable Requirement(s) |
|---|----------------------------|----------------------------------|---|-----------------------------------|
| 2.10a | SV-GEN1 | 10 | 15 | R336.1225, 40 CFR 52.21 (c) & (d) |
| 2.10b | SV-GEN2 | 10 | 15 | R336.1225, 40 CFR 52.21 (c) & (d) |
| The exhaust gases shall be discharged unobstructed horizontally to the ambient air. | | | | |

The following conditions apply to: FG-FACILITY

Emission Limits

| | Pollutant | Equipment | Limit | Time Period | Testing/ Monitoring Method | Applicable Requirement(s) |
|------|------------------|------------------|--------------|---|---|---|
| 3.1a | NOx | FG-FACILITY | 89.9 tpy | 12-month rolling time period as determined at the end of each calendar month. | SC 3.2 | R336.1205(1)(a) and (3), 40 CFR 52.21 (c) & (d) |
| | | | | | | |

Recordkeeping/Reporting/Notification

- 3.2 All records shall be completed and made available by the 15th day of each calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **[R336.1201(3)]**

- 3.3 The permittee shall keep, in a satisfactory manner, monthly and previous 12-month NOx emission calculation records for FG-FACILITY. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205 (1)(a) and (3), 40 CFR 52.21 (c) & (d)]**