



**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES  
Air Pollution Control Program

# INTERMEDIATE STATE PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth herein.

**Intermediate Operating Permit Number: OP2018-040**

**Expiration Date: JUL 17 2023**

**Installation ID: 183-0027**

**Project Number: 2017-01-013**

**Installation Name and Address**


MEMC LLC  
501 Pearl Drive  
St. Peters, MO 63376  
St. Charles County

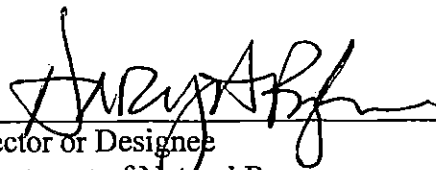
**Parent Company's Name and Address**

Global Wafers BV  
A Tower, 7e Floor, Laan van Langerhuize 1  
1186 DS Amstelveen, Netherlands

**Installation Description:**

MEMC LLC operates a silicon wafering installation in O'Fallon, MO. The plant uses batch processing and other manufacturing equipment to produce a variety of silicon crystal products for use in the electronic industry. It is a synthetic minor source for Hazardous Air Pollutants (HAPs).

  
Prepared by:  
Bern Johnson  
Operating Permit Unit

  
Director or Designee  
Department of Natural Resources

**JUL 17 2018**

Effective Date

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## I. Installation Equipment Listing

### EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and identified as having unit-specific emission limitations.

Emission Point #	Description
11B2	L-100 BOILER #3 (N), 250 HP
11B4	K-35 BOILER #1 (S), 300 HP
11B5	K-35 BOILER #2 (N), 300 HP
12D-L	Emergency Diesel Generator
12D-S	Emergency Diesel Generators (3)
12L	I-25, I-35 SOI EPI

### EMISSION UNITS WITHOUT SPECIFIC LIMITATIONS

The following list provides a description of the equipment, which does not have unit specific limitations at the time of permit issuance.

Emission Point #	Description
11	K-70 SOI POLISHING
11B3	L-100 BOILER #4 (S), 150 HP (6.277 MMBTU/hr, Natural Gas-Fired, Constructed November 22,1991)
11B3	L-100 BOILER #4 (S) DRYERS
11L	K-35 SOI FINAL CLEANING
12B	O-160 AIR STRIPPER - GROUND WATER
20	COOLING TOWER MIST
BF	IPA FUGITIVE EMISSIONS
	300 Gallon Fire Water Diesel Fuel Tank #1
	1,360 Gallon Diesel Tank for 750 kW Emergency Diesel Generator
	2,000 Gallon Diesel Tank for 1250 kW Emergency Diesel Generator
	450 Gallon Diesel Tank for 250 kW Emergency Diesel Generator
	100 Gallon Diesel Tank for R&S Services
	100 Gallon Gasoline Tank for R&S Services

## **II. Plant Wide Emission Limitations**

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance. The plant wide conditions apply to all emission units at this installation. All emission units are listed in Section I under Emission Units with Limitations and Emission Units without Limitations. The following general conditions apply to all plantwide and emission unit specific conditions in this document, unless otherwise stated.

None

### III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

PERMIT CONDITION 1 10 CSR 10-6.060 Construction Permits Required Construction Permit 0694-004C, Issued August 15, 2006	
Emission Unit No.	Description
12L	I-25, I-35 SOI EPI (Silicon Wafer Production)

**Emission Limitation:**

The permittee shall emit less than ten tons Hydrogen Chloride (HCl) from the entire installation in any consecutive 12-month rolling average period. [Special Condition 4.A.]

**Operational Limitation:**

The permittee shall implement packed water scrubbers 12L (Epitaxial Furnaces) to control hydrogen chloride (HCl) and PM10. The destruction efficiency shall be maintained at 99 percent for HCl and PM10. The control device(s) shall be in use at all times the installation is producing wafers, and shall be operated and maintained according to the manufacturer's specifications. [Special Condition 2.]

**Monitoring:**

The permittee shall calibrate, maintain, and operate all pollution control devices and pollution monitoring related instruments according to the manufacturer's recommendations, or maintenance and operational history of similar units. All calibrations, maintenance, and operations shall occur according to good engineering practices. All manufacturing specifications and operational/maintenance histories shall be kept on site.

**Recordkeeping:**

- 1) The permittee shall record monthly and 12-month rolling HCl emissions using guidance in Attachment E.
- 2) The permittee shall keep a copy of this operating permit, copies of all issued construction permits, and copies of all Safety Data Sheets on site.
- 3) All records must be kept for a minimum of 5 years and be made available to department personnel upon request.

**Reporting:**

- 1) The permittee shall report any exceedance of the emission limit above, or any malfunction which could cause an exceedance of the emission limit, no later than ten days after the end of the month during which the exceedance or event causing the exceedance occurs.
- 2) The permittee shall report any deviations from the monitoring, recordkeeping, and reporting requirements of any permit condition in the annual compliance certification.

- 3) All reports and certifications shall be submitted to the Air Pollution Control Program’s Compliance and Enforcement Section at P.O. Box 176, Jefferson City, MO 65102 or [AirComplianceReporting@dnr.mo.gov](mailto:AirComplianceReporting@dnr.mo.gov)

<b>PERMIT CONDITION 2</b> 10 CSR 10-6.070 New Source Performance Regulations 40 CFR Part 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units		
Emission Unit No.	Description	Manufacturer/Model #
11B4	Heating Boiler 1 - 10.043 MMBTU/hr, Natural Gas Fired, Constructed March 3,	Kewanee/ Model L3W-300-G02-LE
11B5	Heating Boiler 2 - 10.043 MMBTU/hr, Natural Gas Fired, Constructed March 3,	Kewanee/ Model L3W-300-G02-LE
11B2	Heating Boiler 3 - 10.461 MMBTU/hr, Natural Gas Fired, Constructed October 8,	Cleaver Brooks/ Model CBW200-250

**Recordkeeping:**

The permittee shall record and maintain records of the amount of fuel combusted during each calendar month. [40 CFR 60.48c(g)(2)] (See Statement of Basis).

<b>PERMIT CONDITION 3</b> 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations 40 CFR Part 63, Subpart ZZZZ National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines		
Emission Unit	Description	Manufacturer/Model #
12DL	Diesel Emergency Generator, 1250 kW (1996)	Cummins DFLC
12DS	Diesel Emergency Generators, 750 kW (1995), 250 kW (1999), 219 HP (2013)	Cummins DFJA, DFAC, CFPE-F40

**Operational Standards:**

- 1) The permittee shall operate and maintain the emergency RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop its own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [§63.6625(e)]
- 2) The permittee shall install a non-resettable hour meter if one is not already installed. [§63.6625(f)]
- 3) The permittee shall operate the emergency stationary RICE according to the requirements in a) through c) below. In order for the engine to be considered an emergency stationary RICE under 40 CFR 63 Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year is prohibited. [§63.6640(f)]
  - a) There is no time limit on the use of emergency stationary RICE in emergency situations. [§63.6640(f)(1)]

- b) The permittee may operate the emergency stationary RICE for the purpose specified in i) below for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by c) below count as part of the 100 hours per calendar year allowed. [§63.6640(f)(2)]
  - i.) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year. [§63.6640(f)(2)(i)]
- c) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph §63.6640(f)(2). Except as provided in i) below, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [§63.6640(f)(4)]
  - i.) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [§63.6640(f)(4)(ii)(A) through (E)]
    - (1) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
    - (2) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
    - (3) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
    - (4) The power is provided only to the facility itself or to support the local transmission and distribution system.
    - (5) The permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine permittee.
- 4) If the permittee does not operate the engine according to the requirements in 1)a) through c) above, the engine will not be considered an emergency engine under 40 CFR 63 Subpart ZZZZ and must meet all requirements for non-emergency engines. [§63.6640(f)]

**Monitoring/Recordkeeping:**

The permittee shall maintain an operating and maintenance log using Attachment D or an equivalent.

**Reporting:**

The permittee shall report any deviations from the operational limitation, monitoring, recordkeeping, and reporting requirements of this permit condition to EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219 with a copy to the Air Pollution Control Program's Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. (Area sources)

<b>PERMIT CONDITION 4</b> 10 CSR 10-6.260 Restriction of Emissions of Sulfur Compounds		
<b>Emission Unit</b>	<b>Description</b>	<b>Manufacturer/Model #</b>
12DL	Diesel Emergency Generator, 1250 kW (1996)	Cummins DFCL
12DS	Diesel Emergency Generators, 750 kW (1995), 250 kW (1999), 219 HP (2013)	Cummins DFJA, DFAC, CFPE-F40

Note: As of issuance of this permit, 10 CSR 10-6.260 is a Federal Only requirement. This regulation was rescinded from Missouri CSR on November 30, 2015 but it remains in Missouri's SIP and thus still remains an applicable federal regulation. Upon adoption of 10 CSR 10-6.261 into the SIP, 10 CSR 10-6.260 will be removed from the SIP and will no longer be applicable to the installation. No action is required on the part of the permittee to remove this permit condition upon the removal of 10 CSR 10-6.260 from the Missouri SIP.

**Emission Limitation:**

Emissions from this source operation shall not contain more than 500 parts per million by volume (ppmv) of SO<sub>2</sub> or more than 35 milligrams per cubic meter (mg/m<sup>3</sup>) of sulfuric acid or sulfur trioxide or any combination of those gases averaged on any consecutive three hour time period.

**Monitoring/Recordkeeping:**

- 1) The permittee shall determine compliance using fuel delivery records.
- 2) The permittee must maintain a record of fuel deliveries.
- 3) The permittee must maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel delivery documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
  - a) The name, address, and contact information of the fuel supplier;
  - b) The type of fuel;
  - c) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
  - d) The heating value of the fuel.
- 4) The permittee shall maintain records for a minimum of five years on-site.
- 5) The permittee shall make all records available within five business days upon written or electronic to Missouri Department of Natural Resources' personnel upon request.
- 6) The permittee shall furnish the Missouri Department of Natural Resources all data necessary to determine compliance status.

**Reporting:**

- 1) The permittee shall report any exceedance of any of the terms imposed by this permit condition, or any malfunction which could cause an exceedance of any of the terms imposed by this permit condition, no later than ten days after the exceedance or event causing the exceedance. The permittee shall submit these reports to EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219.
- 2) The permittee shall report any deviations from the monitoring, recordkeeping, and reporting requirements of this permit condition in the semi-annual monitoring report (SAM) and annual compliance certification (ACC). The permittee shall submit the SAM and ACC reports to both the EPA Region VII and Air Pollution Control Program's Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102 or AirComplianceReporting@dnr.mo.gov.



<b>PERMIT CONDITION 5</b> 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions		
<b>Emission Unit</b>	<b>Description</b>	<b>Manufacturer/Model #</b>
12DL	Diesel Emergency Generator, 1250 kW (1996)	Cummins DFLC
12DS	Diesel Emergency Generators, 750 kW (1995), 250 kW (1999), 219 HP (2013)	Cummins DFJA, DFAC, CFPE-F40

Note: As of issuance of this permit, 10 CSR 10-6.261 is a State Only requirement. Missouri's SIP has not adopted this regulation; therefore, this regulation is a state only requirement. Upon adoption into Missouri's SIP this regulation will be both a state and federal requirement. No action is required on the part of the permittee upon the adoption of 10 CSR 10-6.261 into the Missouri SIP.

**Operational Limitation**

Fuel shall not contain more than 8,812 parts per million (ppm) of sulfur for distillate fuel.  
[10 CSR 10- 6.261(3)(C)]

**Monitoring/ Recordkeeping**

- 1) The permittee shall determine compliance using fuel delivery records. [10 CSR 10-6.261(3)(E)3.]
- 2) The permittee must maintain a record of fuel deliveries. [10 CSR 10-6.261(4)(A)3.]
- 3) The permittee must maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel deliver documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule: [10 CSR 10-6.261(4)(C)]
  - a) The name, address, and contact information of the fuel supplier; [10 CSR 10-6.261(4)(C)1.]
  - b) The type of fuel; [10 CSR 10-6.261(4)(C)2.]
- 4) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and [10 CSR 10-6.261(4)(C)4.]
- 5) The heating value of the fuel. [10 CSR 10-6.261(4)(C)5.]

**Reporting**

The permittee shall report any excess emissions other than startup, shutdown, and malfunction excess emissions already required to be reported under 10 CSR 10-6.050 to the director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be a written report and must include, at a minimum, the following: [10 CSR 10-6.261(4)(A)1.]

- 1) Name and location of source;
- 2) Name and telephone number of person responsible for the source;
- 3) Identity and description of the equipment involved;
- 4) Time and duration of the period of SO<sub>2</sub> excess emissions;
- 5) Type of activity;
- 6) Estimate of the magnitude of the SO<sub>2</sub> excess emissions expressed in the units of the applicable emission control regulation and the operating data and calculations used in estimating the magnitude;
- 7) Measures taken to mitigate the extent and duration of the SO<sub>2</sub> excess emissions; and
- 8) Measures taken to remedy the situation which caused the SO<sub>2</sub> excess emissions and the measures taken or planned to prevent the recurrence of these situations.

## IV. Core Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR), Code of State Regulations (CSR), and local ordinances for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance. The following are only excerpts from the regulation or code, and are provided for summary purposes only.

### **10 CSR 10-6.045 Open Burning Requirements**

- 1) **General Provisions.** The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.
- 2) Certain types of materials may be open burned provided an open burning permit is obtained from the director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.

### **10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions**

- 1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the director within two business days, in writing, the following information:
  - a) Name and location of installation;
  - b) Name and telephone number of person responsible for the installation;
  - c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
  - d) Identity of the equipment causing the excess emissions;
  - e) Time and duration of the period of excess emissions;
  - f) Cause of the excess emissions;
  - g) Air pollutants involved;
  - h) Estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;
  - i) Measures taken to mitigate the extent and duration of the excess emissions; and
  - j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
- 2) The permittee shall submit the paragraph 1 information to the director in writing at least ten days prior to any maintenance, start-up or shutdown activity which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, notice shall be given as soon as practicable prior to the activity.
- 3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo.

- 4) Nothing in this rule shall be construed to limit the authority of the director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.
- 5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

#### **10 CSR 10-6.060 Construction Permits Required**

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

#### **10 CSR 10-6.065 Operating Permits**

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. The permittee shall retain the most current operating permit issued to this installation on-site. The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request.

#### **10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos**

The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.

#### **10 CSR 10-6.100 Alternate Emission Limits**

Proposals for alternate emission limitations shall be submitted on Alternate Emission Limits Permit forms provided by the department. An installation owner or operator must obtain an Alternate Emission Limits Permit in accordance with 10 CSR 10-6.100 before alternate emission limits may become effective.

#### **10 CSR 10-6.110 Reporting of Emission Data, Emission Fees and Process Information**

- 1) The permittee shall submit a Full Emissions Report either electronically via MoEIS, which requires Form 1.0 signed by an authorized company representative, or on Emission Inventory Questionnaire (EIQ) paper forms on the frequency specified in this rule and in accordance with the requirements outlined in this rule. Alternate methods of reporting the emissions, such as spreadsheet file, can be submitted for approval by the director.
- 2) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.
- 3) The permittee shall submit a full EIQ for the 2017 and 2020 reporting years. In the interim years the installation may submit a Reduced Reporting Form; however, if the installation's emissions increase or decrease by more than five tons when compared to their last submitted full EIQ, the installation shall submit a full EIQ rather than a Reduced Reporting Form.
- 4) In addition to the EIQ submittal schedule outlined above, any permit issued under 10 CSR 10-6.060 section (5) or (6) triggers a requirement that a full EIQ be submitted in the first full calendar year after the permitted equipment initially operates.

**10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential**

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

**10 CSR 10-6.150 Circumvention**

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

**10 CSR 10-6.165 Restriction of Emission of Odors**

**This is a State Only permit requirement.**

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour.

**10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin**

**Emission Limitation:**

- 1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the director.
- 2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
- 3) Should it be determined that noncompliance has occurred, the director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
  - a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
  - b) Paving or frequent cleaning of roads, driveways and parking lots;
  - c) Application of dust-free surfaces;
  - d) Application of water; and
  - e) Planting and maintenance of vegetative ground cover.

**Monitoring:**

The permittee shall conduct inspections of its facilities sufficient to determine compliance with this regulation. If the permittee discovers a violation, the permittee shall undertake corrective action to eliminate the violation.

The permittee shall maintain the following monitoring schedule:

- 1) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
- 2) Should no violation of this regulation be observed during this period then-
  - a) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
  - b) If a violation is noted, monitoring reverts to weekly.
  - c) Should no violation of this regulation be observed during this period then-
    - i) The permittee may observe once per month.
    - ii) If a violation is noted, monitoring reverts to weekly.
- 3) If the permittee reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner to the initial monitoring frequency.

**Recordkeeping:**

The permittee shall document all readings on Attachment B, or its equivalent, noting the following:

- 1) Whether air emissions (except water vapor) remain visible in the ambient air beyond the property line of origin.
- 2) Whether equipment malfunctions contributed to an exceedance.
- 3) Any violations and any corrective actions undertaken to correct the violation.

**10 CSR 10-6.180 Measurement of Emissions of Air Contaminants**

- 1) The director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The director may specify testing methods to be used in accordance with good professional practice. The director may observe the testing. All tests shall be performed by qualified personnel.
- 2) The director may conduct tests of emissions of air contaminants from any source. Upon request of the director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
- 3) The director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

**10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants**

**Emission Limitation:**

The permittee shall not cause or permit to be discharged into the atmosphere from the facility any visible emissions in excess of 20 percent. Since all emission units are contained inside the main building, only one observation is required for the entire facility.

**Monitoring:**

- 1) The permittee shall conduct visible emissions observations for the entire facility using the procedures contained in USEPA Test Method 22. The permittee is only required to take readings when the emission unit is operating and when the weather conditions allow. If the permittee observes no visible or other significant emissions using these procedures, then no further observations are required. If visible emissions are observed, the source representative would then conduct a Method 9 observation.
- 2) The permittee must maintain the following monitoring schedule:

- a) The permittee shall conduct weekly observations for a minimum of eight (8) consecutive weeks after permit issuance.
- b) Should the permittee observe no violations of this regulation during this period then-
  - i) The permittee may observe once every two (2) weeks for a period of eight (8) weeks.
  - ii) If a violation is noted, monitoring reverts to weekly.
  - iii) Should no violation of this regulation be observed during this period then-
    - (1) The permittee may observe once per month.
    - (2) If a violation is noted, monitoring reverts to weekly.
- 3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.
- 4) The renewal of an operating permit does not require the installation to revert to weekly monitoring; instead, it should continue with the monitoring regime it is under at the time of issuance of the renewal permit.

**Recordkeeping:**

The permittee shall maintain records of all observation results using Attachment A (or its equivalent), noting:

- 1) Whether any air emissions (except for water vapor) were visible from the emission units;
- 2) All emission units from which visible emissions occurred;
- 3) Whether the visible emissions were normal for the process;
- 4) The permittee shall maintain records of any equipment malfunctions, which may contribute to visible emissions; and,
- 5) The permittee shall maintain records of all USEPA Method 9 opacity tests performed.

**10 CSR 10-6.250 Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements**

**This is a State Only permit requirement.**

The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the department to monitor training provided to employees.

**10 CSR 10-6.280 Compliance Monitoring Usage**

- 1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
  - a) Monitoring methods outlined in 40 CFR Part 64;
  - b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, “Operating Permits”, and incorporated into an operating permit; and
  - c) Any other monitoring methods approved by the director.
- 2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at an installation:
  - a) Monitoring methods outlined in 40 CFR Part 64;

- b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
  - c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
- 3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
- a) Applicable monitoring or testing methods, cited in:
    - i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";
    - ii) 10 CSR 10-6.040, "Reference Methods";
    - iii) 10 CSR 10-6.070, "New Source Performance Standards";
    - iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; or
  - b) Other testing, monitoring, or information gathering methods, if approved by the director, that produce information comparable to that produced by any method listed above.

**10 CSR 10-5.040 Use of Fuel in Hand-Fired Equipment Prohibited**

No owner or operator shall operate applicable hand-fired fuel burning equipment unless the owner or operator meets the conditions set forth in 10 CSR 10-5.040. This regulation shall apply to all hand-fired fuel-burning equipment at commercial facilities including, but not limited to, furnaces, heating and cooking stoves and hot water furnaces. It shall not apply to wood-burning fireplaces and wood-burning stoves in dwellings, nor to fires used for recreational purpose, nor to fires used solely for the preparation of food by barbecuing or to other equipment exempted under 10 CSR 10-5.040. Hand-fired fuel-burning equipment is any stove, furnace, or other fuel-burning device in which fuel is manually introduced directly into the combustion chamber.

**10 CSR 10-5.060 Refuse Not to be Burned in Fuel Burning Installations  
(Rescinded on February 11, 1979, Contained in State Implementation Plan)**

No person shall burn or cause or permit the burning of refuse in any installation which is designed for the primary purpose of burning fuel.

**10 CSR 10-5.120 Information on Sales of Fuels to be Provided and Maintained**

Every delivery of coal or residual fuel oil when first delivered to a consumer or wholesaler in the St. Louis metropolitan area must be accompanied by a ticket prepared in triplicate and containing at least the name and address of the seller and the buyer; the grade of fuel; ash content of coal, the source of the fuel, which must be an approved source, and such other information as the Air Conservation Commission may require. One copy of each ticket shall be kept by the person delivering the fuel and be retained for one year; one copy is to be given to the recipient of the fuel to be retained for one year; and, upon request, within 30 days after delivery of the fuel, the delivering party shall mail one copy to the Air Conservation Commission.

**40 CFR Part 82 Protection of Stratospheric Ozone (Title VI)**

- 1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
  - a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to 40 CFR §82.106.
  - b) The placement of the required warning statement must comply with the requirements of 40 CFR §82.108.

- c) The form of the label bearing the required warning statement must comply with the requirements of 40 CFR §82.110.
- d) No person may modify, remove, or interfere with the required warning statement except as described in 40 CFR §82.112.
- 2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B of 40 CFR Part 82:
  - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices described in 40 CFR §82.156.
  - b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment described in 40 CFR §82.158.
  - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR §82.161.
  - d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with the record keeping requirements of 40 CFR §82.166. ("MVAC-like" appliance as defined at 40 CFR §82.152).
  - e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to 40 CFR §82.156.
  - f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR §82.166.
- 3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.
- 4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements contained 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. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.
- 5) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program. *Federal Only - 40 CFR Part 82.*



## V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

### **10 CSR 10-6.065, §(5)(C)1, §(6)(C)1.B, §(5)(E)2.C Permit Duration**

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed. If a timely and complete application for a permit renewal is submitted, but the Air Pollution Control Program fails to take final action to issue or deny the renewal permit before the end of the term of this permit, this permit shall not expire until the renewal permit is issued or denied.

### **10 CSR 10-6.065, §(5)(C)1 and §(6)(C)1.C General Record Keeping and Reporting Requirements**

- 1) Record Keeping
  - a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
  - b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
- 2) Reporting
  - a) All reports shall be submitted to the Air Pollution Control Program, Compliance and Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
  - b) The permittee shall submit a report of all required monitoring by:
    - i) April 1st for monitoring which covers the January through December time period.
    - ii) Exception. Monitoring requirements which require reporting more frequently than annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
  - c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit.
  - d) Submit supplemental reports as required or as needed. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
    - i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7 of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.

- ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.
- iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's annual report shall be reported on the schedule specified in this permit.
- e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.
- f) The permittee may request confidential treatment of information submitted in any report of deviation.

**10 CSR 10-6.065 §(5)(C)1 and §(6)(C)1.D Risk Management Plan Under Section 112(r)**

If the installation is required to develop and register a risk management plan pursuant to Section 112(R) of the Act, the permittee will verify that it has complied with the requirement to register the plan.

**10 CSR 10-6.065(5)(C)1.A General Requirements**

- 1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
- 2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
- 3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- 4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
- 5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted under this rule.
- 6) Failure to comply with the limitations and conditions that qualify the installation for an Intermediate permit make the installation subject to the provisions of 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit.

**10 CSR 10-6.065(5)(C)1.C Reasonably Anticipated Operating Scenarios**

None

**10 CSR 10-6.065, §(5)(B)4; §(5)(C)1, §(6)(C)3.B; and §(6)(C)3.D; and §(5)(C)3 and §(6)(C)3.E.(I) – (III) and (V) – (VI) Compliance Requirements**

- 1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.

- 2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
  - a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
  - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  - c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
  - d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
- 3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
  - a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
  - b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
- 4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and exceedances must be included in the compliance certifications. The compliance certification shall include the following:
  - a) The identification of each term or condition of the permit that is the basis of the certification;
  - b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
  - c) Whether compliance was continuous or intermittent;
  - d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
  - e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

<b>10 CSR 10-6.065, §(5)(C)1 and §(6)(C)7 Emergency Provisions</b>
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- 1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:
  - a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
  - b) That the installation was being operated properly,
  - c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and

- d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
- 2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

**10 CSR 10-6.065(5)(C)5 Off-Permit Changes**

- 1) Except as noted below, the permittee may make any change in its permitted installation's operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Off-permit changes shall be subject to the following requirements and restrictions:
  - a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is a Title I modification; Please Note: Changes at the installation which affect the emission limitation(s) classifying the installation as an intermediate source (add additional equipment to the record keeping requirements, increase the emissions above major source level) do not qualify for off-permit changes.
  - b) The permittee must provide contemporaneous written notice of the change to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change; and
  - c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes.

**10 CSR 10-6.020(2)(R)34 Responsible Official**

The application utilized in the preparation of this permit was signed by Karla Chaney, Plant Manager. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

**10 CSR 10-6.065 §(5)(E)4 and §(6)(E)6.A(III)(a)-(c) Reopening-Permit for Cause**

This permit may be reopened for cause if:

- 1) The Missouri Department of Natural Resources (MoDNR) or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,

- 2) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
  - a) The permit has a remaining term of less than three years;
  - b) The effective date of the requirement is later than the date on which the permit is due to expire;  
or
  - c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
- 3) MoDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

**10 CSR 10-6.065 §(5)(E)1.A and §(6)(E)1.C Statement of Basis**

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

## **VI. Attachments**

Attachments follow.

**Attachment A**  
**Visible Emission Observations**

Date	Time	Emission Source	Visible Emissions		Excess Emissions		
			No	Yes <sup>1</sup>	Cause	Corrective Action	Initial

<sup>1</sup>If there are visible emissions, the permittee shall complete the excess emissions columns.



**Attachment C**

Method 9 Opacity Emissions Observations								
Company					Observer			
Location					Observer Certification Date			
Date					Emission Unit			
Time					Control Device			
Hour	Minute	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
SUMMARY OF AVERAGE OPACITY								
Set Number	Time				Opacity			
	Start	End	Sum	Average				

Readings ranged from \_\_\_\_\_ to \_\_\_\_\_ % opacity.

Was the emission unit in compliance at the time of evaluation?

YES NO Signature of Observer





**Attachment E**  
**Hydrogen Chloride & Combined HAP Tracking**

**Permit Condition 1 Emission Limit:**

- Permit Condition 1 of this operating permit limits the emissions of hydrogen chloride (HCl) from emission unit 12L emitted by this installation to less than 10 tons of HCl in any rolling 12-month period. Only HCl has the potential to exceed the 10 tpy limit; other HAPs do not need to be tracked.
- Record at a minimum the following information:
  - The monthly throughput of 12L I-25, I-35 SOI EPI line.
  - Calculate monthly HCl emissions by multiplying throughput for 12L by the HCl emission factor of 4.54 lbs/ KSI. Include capture (99%) and control (99%) efficiencies, which are not accounted for in the emission factor.
  - Calculate rolling 12-month HAP emissions by adding current month's emissions to previous eleven months emissions.
  - Compare emission total to limit and indicate whether or not compliance was met
  - Include startup, shutdown and malfunction (SSM) emissions, if any, in each monthly total as reported to the Air Pollution Control Program in accordance with 10 CSR 10- 6.050 *Startup, Shutdown and Malfunction Conditions*.

# STATEMENT OF BASIS

## Voluntary Limitations

In order to qualify for this Intermediate State Operating Permit, the permittee has accepted voluntary, federally enforceable emission limitations. Per 10 CSR 10-6.065(5)(C)1.A.(VI), if these limitations are exceeded, the installation immediately becomes subject to 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit. It is the permittee's responsibility to monitor emission levels and apply for a part 70 operating permit far enough in advance to avoid this situation. This may mean applying more than eighteen months in advance of the exceedance, since it can take that long or longer to obtain a part 70 operating permit.

## INSTALLATION DESCRIPTION

MEMC LLC operates a silicon wafering installation in O'Fallon, Missouri, which is in St. Charles County, part of the St. Louis ozone non-attainment area for Ozone and Fine Particulate Matter. The company changed names from Monsanto Electronic Materials Company, Inc. (MEMC) to SunEdison Semiconductor on May 30, 2013, then to MEMC LLC in March 2018. The plant uses batch processing and other manufacturing equipment to produce a variety of silicon crystal products for use in the electronic industry. MEMC LLC has the potential to be a major source for HAPs. MEMC LLC has accepted voluntary, federally enforceable emission limitations to below the Title V HAP threshold to become a synthetic minor source. The installation is not a named source and fugitive emissions are not counted towards potential-to-emit.

As part of the NOx SIP Call, effective June 2, 2009, MEMC LLC entered into a Consent Agreement stating that if the nitric acid etching stations were shut down, their scrubbers would not be required to be operated. The nitric acid etching stations Unit 7 and 7L equipped with small scrubbers were dismantled rendering the consent decree effectively obsolete. Much equipment was dismantled and removed from the facility in December 2012 and September 2015:

Emission Unit	Equipment Description	Date Removed from Facility
EU 12	N-43 SPD EPI	December, 2012
EU 11B1	Boiler 5	December, 2012
EU 11B6	Boiler 6	December, 2012
EU 0150	Two Maintenance Shop Naphtha Cleaners	September, 2015
EU01	Small Diameter Crystal Pulling L100	September, 2015
EU02	Rod Lab L100	September, 2015
EU03	Rod Grinding L100	September, 2015
EU01L	Large Diameter Crystal Pulling PI20	September, 2015
EU02L	Rod LabR120	September, 2015
EU03L	Rod Grinding R120	September, 2015
EU 04L	Slicing Wire Saws K45	September, 2015
EU05L	Lapping K45	September, 2015
EU09L	Clean & Heat Treat	September, 2015
EU30	Crystal Research LI20	September, 2015
EU 12W-U	Waste Treatment - Lime Transfer Unload	September, 2015
EU05AL	Applications Laboratory/Worldwide Lab	September, 2015
Tank	12,000 Gallon Above Ground Horizontal for No. 2 Distillate	September, 2015
Tank	300 Gallon Fire Water Diesel Fuel Tank #2	December, 2012
Tank	185 Gallon Diesel Tank for 350 kW Emergency Diesel Generator	September, 2015

**Updated Potential to Emit for the Installation and Reported Air Pollutant Emissions, in tons per year**

Pollutants	Potential Emissions <sup>1</sup>	Reported Emissions				
		2016	2015	2014	2013	2012
Particulate Matter ≤ Ten Microns (PM <sub>10</sub> )	22.89	3.42	2.99	6.73	6.66	6.77
Particulate Matter ≤ 2.5 Microns (PM <sub>2.5</sub> )	16.64	2.03	1.82	3.84	3.75	3.88
Sulfur Oxides (SO <sub>x</sub> )	0.17	0.04	0.04	0.04	0.04	0.05
Nitrogen Oxides (NO <sub>x</sub> )	46.12	5.89	6.29	7.85	7.02	7.11
Volatile Organic Compounds (VOC)	19.90	1.81	1.84	2.28	4.19	5.03
Carbon Monoxide (CO)	21.29	4.95	5.28	6.60	5.90	7.30
Hazardous Air Pollutants (HAPs)	60.19 (1.09 controlled)	0.43	0.33	0.46	0.26	0.29
HCl	59.70 (0.60 controlled)	0.35	0.13	0.26	0.15	0.13
ethylene dichloride	0.10	0.04	0.15	0.15	0.08	0.12
trichloroethylene	0.05	0.02	0.03	0.03	0.02	0.03
vinyl chloride	0.02	0.01	0.02	0.02	0.01	0.01
vinylidene chloride	0.00	0.00	0.00	0.00	0.00	0.00

<sup>1</sup>Each emission unit was evaluated at 8,760 hours of uncontrolled annual operation, except for emergency generators which were evaluated at 500 hours.

**Permit Reference Documents**

These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

- 1) Intermediate Operating Permit Application, received January 4, 2017;
- 2) 2016 Emissions Inventory Questionnaire, received April 27, 2017;
- 3) Construction Permit 0694-004A, issued April 14, 1998;
- 4) Construction Permit 1195-016A, issued February 21, 1996;
- 5) Construction Permit 0997-044, issued September 9, 1997;
- 6) Construction Permit 0498-012, issued March 30, 1998;
- 7) Construction Permit 092001-018, issued September 21, 2001;
- 8) Construction Permit 072005-047, issued July 25, 2005;
- 9) WebFIRE; and

10) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

**Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits**

In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

None

**Other Air Regulations Determined Not to Apply to the Operating Permit**

The Air Pollution Control Program has determined that the following requirements are not applicable to this installation at this time for the reasons stated.

10 CSR 10-5.300 *Control of Emissions From Solvent Metal Cleaning*

This rule is no longer applicable because the maintenance shop naphta cleaners have been removed.

10 CSR 10-6.100, *Alternate Emission Limits*

This rule is not applicable because the installation is in an ozone attainment area.

**Construction Permit History**

CP 0694-004: All conditions of this permit are superseded by CP 0694-004C. CP 0694-004C – updated changes to emission units and operations at the facility. All wafer producing operations are now done by the I-25, I-35 SOI EPI (Silicon Wafer Production) line. The control device requirement in Permit Condition 1 now applies only this line. The PTE for VOCs also dropped to well below 100 tpy, so the 100 tpy emission limit was removed (the HAP hydrogen chloride (HCl) is not a VOC).

CP 1195-016 and 1195-016A were issued for the construction of emergency generators and to increase boiler capacity. In CP 1195-016, a 40 ton per year NO<sub>x</sub> limit was issued due to the emissions of the emergency generators. CP 1195-016A was issued as an amendment to 1195-016, superseding the NO<sub>x</sub> limit in 1195-016. CP 1195-016 is not incorporated by reference into this permit. CP 1195-016A does not include any special conditions; therefore, it is not incorporated by reference into this permit.

CP 0997-044 – the boiler authorized by the permit was removed.

CP 0498-012, Issued March 30, 1998 – equipment was not installed, has been removed, or are subject to more restrictive rules. Therefore, the conditions of this permit are not included in this document.

CP 092001-018: The manufacturing equipment referenced in the construction permit was not installed. The permit and its associated language were allowed to lapse after two years, on September 21, 2003.

CP 072005-047: The three etching work stations consisting of ten baths for nitric, acetic and hydrofluoric acids for testing of silicon crystal samples that would make up a proposed “Emission

Unit 31" referenced in the construction permit were not installed. The permit and its associated language were allowed to lapse after two years from the effective date of this permit.

**New Source Performance Standards (NSPS) Applicability**

40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*. Subpart Dc applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu/hr) or less, but greater than or equal to 2.9 MW (10 million Btu/hr). Boilers #1, #2, and #3 have heat input capacities of less than 100 MMBTU/hr but greater than 10 MMBTU/hr and constructed after June 9, 1989, therefore these boilers are subject to the provisions of this subpart. Heating Boiler #4 rated at 6.277 MMBTU/hr is not subject to this subpart. Because these units are not subject to SO<sub>2</sub>, PM<sub>10</sub>, or opacity limits, the only requirement is tracking fuel usage as required by PC 2.

40 CFR Part 60, Subpart K, Ka, and Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessel* – all storage tanks are below the level of reporting significance (Subpart K – 40,000 Gallons, Subpart Ka – 40,000 Gallons and Subpart Kb – 19,812.9 Gallons) and therefore are not subject to 40 CFR Part 60 Subpart K, Ka or Kb.

**Maximum Achievable Control Technology (MACT) Applicability**

40 CFR Part 63, Subpart T, *National Emission Standards for Halogenated Solvent Cleaning*. The cleaning solvents covered by the MACT standard are solvents containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform, or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. MEMC LLC does not use any of these HAPs in its cleaning stations. Therefore, the installation is not subject to Subpart T.

40 CFR Part 63, Subpart BBBBB, *National Emission Standards for Hazardous Air Pollutants: Semiconductor Manufacturing* – the provisions of Subpart BBBBB apply to semiconductor crystal growing facilities, semiconductor wafer fabrication facilities, and semiconductor test and assembly facilities (NAICS 334413, SIC 3674) that are major sources of HAPs. This permit imposes plantwide conditions for limiting the plantwide HAP emission to less than ten tons per year of individual HAPs and 25 tons per year of combined HAPs and therefore Subpart BBBBB does not apply.

40 CFR Part 63, Subpart DDDDD, *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters* – this subpart applies to boilers and process heaters at a major source of HAP emissions. Since MEMC LLC is an area source for HAPs, Subpart DDDDD do not apply.

40 CFR Part 63, Subpart JJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers - Area Sources* – this subpart applies to boilers at area source facilities that burn coal, oil, biomass, or non-waste materials. Boilers burning natural gas as defined in this regulation would not be affected by the rule. All MEMC LLC boilers are natural gas fired. Therefore, Subpart JJJJJ does not apply.

**National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability**  
None

**Other Regulatory Determinations**  
None

**Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis**

Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons.

- 1) The specific pollutant regulated by that rule is not emitted by the installation.
- 2) The installation is not in the source category regulated by that rule.
- 3) The installation is not in the county or specific area that is regulated under the authority of that rule.
- 4) The installation does not contain the type of emission unit which is regulated by that rule.
- 5) The rule is only for administrative purposes.

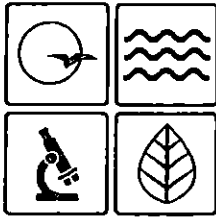
Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the APCP a schedule for achieving compliance for that regulation(s).

## **Response to Public Comments**

A draft of the Intermediate Operating Permit for MEMC LLC (as SunEdison Semiconductor) was placed on public notice on March 23, 2018, by the Missouri Department of Natural Resources (MDNR).

No comments were received.





Missouri Department of dnr.mo.gov

# NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

JUL 17 2018

Ms. Karla Chaney  
MEMC LLC  
P.O. Box 8, Mail Code 65  
St. Peters, MO 63376

Re: MEMC LLC, 183-0027  
Permit Number: OP2018-040

Dear Ms. Chaney

Enclosed with this letter is your intermediate operating permit. Please review this document carefully. Operation of your installation in accordance with the rules and regulations cited in this document is necessary for continued compliance. It is very important that you read and understand the requirements contained in your permit.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

You may appeal this permit to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.078.16 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within thirty (30) days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If you send your appeal by registered or certified mail, we will deem it filed on the date you mailed it. If you send your appeal by a method other than registered or certified mail, we will deem it filed on the date the AHC receives it.

If you have any questions or need additional information regarding this permit, please contact the Air Pollution Control Program (APCP) at (573) 751-4817, or you may write to the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.  
Operating Permit Unit Chief

MJS:bjj

Enclosures

c: PAMS File: 2017-01-013

