Statement of Basis

MDA Manufacturing, Inc.
Morgan County
Decatur, Alabama
712-0042

MDA Manufacturing, Inc. ("MDA") has applied for Major Source Operating Permit No. 712-0042. This proposed Title V Major Source Operating Permit is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of the permit.

Background

This facility is a chemical production plant which produces fluoropolymers. The facility is allowed to operate 8,760 hours per year unless otherwise specified. Based on the Title V permit application, this facility is a major source for R-22 (chlorodifluoromethane), a stratospheric ozone depleting substance, which is a regulated pollutant under Title VI of the Clean Air Act. The facility is also a major source for particulate matter (PM) and volatile organic compounds (VOC) due to the facility's association with Daikin America, Inc. ("Daikin").

Changes from existing permit:

1. Revised emission calculations were submitted by for the facility. The emissions from the adjacent facility, Daikin were included in MDA's plant wide emission totals.

2. Update Table of Contents to account for new Unit Identifications.

3. Administratively changed unit title from J1-V014 to R-22 Unit Storage Tanks.

4. Administratively changed unit titles from J2-V501, J2-V201, and J2-V203 to HFP Unit Storage Tanks.

5. Administratively added the bubbling columns (J1-5) to the R-22 Unit.

Each of the individual production units is described below:

R-22 Manufacturing Unit

The control equipment in this unit includes a total scrubber system (J1-2), two stage bubbling column (J1-5), neutralization pit and waste HCL area scrubber (J1-6), and the T-

Thermal incinerator with scrubber. The T-Thermal incinerator with scrubber is operated by the adjacent facility, Daikin America, Inc. ("Daikin"); however, multiple emission points from MDA are routed to the control devices. This unit is subject to synthetic minor PSD limitations for volatile organic compounds (VOC) and hazardous air pollutants (HAP). The unit is also subject to best available control technology (BACT) limitations for VOC and chlorofluorocarbons (CFC). Based on the products manufactured, the unit would be subject to the requirements of 40 CFR Part 60, Subpart VV and Subpart RRR.

Emission Standards

VOC/CFC

In order to maintain the unit's VOC emissions below levels considered significant for PSD, the emissions from the reactor process vent are routed to the total scrubber (J1-2) and the VOC emissions from J1-2 are required to be less than 1.5 lb/hr. Additionally, the emissions from the process predryer are routed to the bubbling columns for control of VOC.

The distillation area (J1-3) is subject to the requirements of BACT. It is required to be routed to the T-Thermal incinerator in order to maintain a destruction removal efficiency (DRE) of greater than or equal to 99.99% for VOC and CFC.

The unit has committed to maintaining the reactor vents and all associated recovery devices (J1-2 and J1-3) total resource effectiveness (TRE) values at greater than 8.0. In accordance with Subpart RRR, since the reactor vents would be maintained at greater than 8.0, the unit would exempt from all provisions of subpart RRR except for §§60.702(c); 60.704(d), (e), and (f); and 60.705(g), (l)(1), (l)(6), and (t).

The unit is subject to 40 CFR 60, Subpart VV. Subpart VV requires the implementation of an LDAR program as listed in 40 CFR 60.482-1 through 60.482-10 for each piece of equipment in VOC service.

Periodic Monitoring

VOC/CFC

As an indicator of compliance with the VOC limitations for the total scrubber (J1-2), the scrubber recirculation flow rate shall be monitored at least every 12 hours and shall be maintained at greater than 30 gpm.

In order to ensure that the TRE index value for each reactor process vent is maintained at greater than 8.0, the facility would be required to recalculate the TRE value any time a process change is made to the unit.

In order to indicate compliance with the LDAR requirements for fugitive emissions of VOC, the unit is required to maintain the records listed in 40 CFR Part 60, Subpart VV.

The predryer is required to be routed to the bubbling column (J1-5) while the unit is operating. Since the emissions from the dryer are expected to be minimal, no additional periodic monitoring is required.

In order to determine compliance with the 99.99% DRE requirement, the T-Thermal incinerator is required to maintain a firebox temperature of greater than or equal to 2300 ˚F. The firebox temperature is to be recorded continuously and maintained.

R-22 Storage Tanks

The R-22 unit utilizes 6 tanks (J1-V011, J1-V014, J1-V021, J1-V412, J1-V422, and J1-V256) which store VOC and/or HAP. Storage tank J1-V014 is subject to 40 CFR Part 60, Subpart Kb. J1-V014 is also subject to BACT limitations for VOC. Storage tanks J1-V011, J1-V021, J1-V412, J1-V422 and J1-V256 are subject to synthetic minor Title V limitations for HAP.

Emission Standards

VOC/HAP

As a requirement of BACT, the unit routes the J1-V014 storage tank to the T-Thermal incinerator for control of VOC. The incinerator is required to maintain a destruction removal efficiency (DRE) of 99.99% for all VOC. The tank is also subject to the requirements of 40 CFR Part 60, Subpart Kb, which requires the source to maintain a DRE of 95% for VOC.

In order to remain synthetic minor for HAP with respect to Title V, storage tanks J1-V412 and J1-V422 are routed to the HCL scrubber (J1-4) and storage tank J1-V256 is routed to the limestone pit and waste HCL storage scrubber (J1-6) for control. Additionally, storage tanks J1-V011 and J1-V021 are routed to the bubbling columns (J1-5) for control.

Periodic Monitoring

VOC/HAP

The storage tanks (J1-V412, J1-V422, J1-V256, J1-V011, and J1-V021) are required to be routed to their respective control device (the HCL scrubber (J1-4), limestone pit and waste HCL storage scrubber (J1-6), and bubbling columns (J1-5)) while the unit is operating. Since the only emissions from the tanks would be breathing losses and the emissions are expected to be negligible, no additional periodic monitoring is required.

In order to determine compliance with the 99.99% DRE requirement, the T-Thermal incinerator is required to maintain a firebox temperature of greater than or equal to 2300 ˚F. The firebox temperature is to be recorded continuously and maintained. Since the BACT requirement (99.99%) is more stringent than the requirement of 40 CFR Part 60, Subpart Kb (95%), no additional monitoring is required. The unit would meet the requirements of Subpart Kb inherently.

HFP Unit

The only emission point associated with the hexafluoropropylene (HFP) unit is a water blowdown pit (J2-1). The unit is subject to PSD BACT limitations for VOC. Additionally, the waste from this unit (methanol) would be classified as non-hazardous solid waste. Therefore, disposal of the waste from this unit in the T-Thermal incinerator would be applicable to the requirements of ADEM Admin. Code r. 335-3-3-.05 (Incineration of Commercial and Industrial Solid Waste (CISWI)).

Emission Standards

VOC

The water blowdown pit (J2-1) is uncontrolled. There are no additional requirements for this emission point.

In accordance with the requirements of BACT, the unit must implement an LDAR program equivalent to 40 CFR Part 60, Subpart VV for all equipment in VOC service as listed in 40 CFR 60.482-1 through 60.482-10.

CISWI

The T-Thermal incinerator is operated and maintained by the adjacent facility Daikin. However, since the waste from this unit would be classified as a solid waste, the CISWI emission standards for the T-Thermal incinerator are described in this section.

The T-Thermal incinerator would be classified as an existing unit (constructed before November 30, 1999) with respect to CISWI. The emission limitations for existing units are listed in the table below. When firing solid waste the unit is required to meet the following emission limits.

Pollutant	Limit (units at a 7% oxygen dry basis, except opacity)
Cadmium	0.004 mg/dscm
Carbon Monoxide	157 ppmvd
Dioxins/furans	0.41 ng/dscm
Hydrogen Chloride	62 ppmdv
Lead	0.04 mg/dscm
Mercury	0.47 mg/dscm
Nitrogen Oxides	388 ppmdv
Particulate Matter	70 mg/dscm
Sulfur Dioxide	20 ppmdv
Opacity	10 percent (6-minute averages)

Periodic Monitoring

VOC

In order to indicate compliance with the LDAR requirements for fugitive emissions of VOC, the unit is required to maintain the records listed in 40 CFR Part 60, Subpart VV.

CISWI

Since a wet scrubber is utilized for control, the facility has established operating limits for 4 parameters in order to indicate compliance. The parameters monitored, operating limit set during the most recent compliance testing, and the averaging time for each value are listed below.

Parameter	Operating Limit	Averaging Time
Charge Rate	<110% of rate during compliance testing	3-hour rolling
Scrubber Pressure Drop	> 1.85 in H2O	3-hour rolling
Scrubber Liquor Flow Rate	≥ 55 gpm	3-hour rolling
Scrubber Liquor pH	≥ 7	3-hour rolling

The facility would also be required to inspect the control device annually. Additionally, performance testing is required annually and within 60 days of a process change made to the unit.

HFP Unit Tanks

The HFP unit utilizes 4 tanks which store VOC and/or HAP. The storage tanks J2-V201 and J2-V203 are subject to BACT requirements for VOC. The storage tanks J2-V202 and J2-V501 are subject to synthetic PSD minor limitations for VOC.

Emission Standards

VOC

As a requirement of BACT, the storage tanks J2-V201 and J2-V203 are routed to a seal pot. The seal pot is required to be maintained above the opening of the discharge pipe and

the maximum VOC concentration of the water within the seal pot is required to be below 10% by weight.

In order to remain synthetic minor with respect to PSD for VOC, storage tanks J2-V202 and J2-V501 are equipped with a conservation vent. Additionally, each applicable piece of equipment in VOC service associated with the tanks would be subject to a leak detection and repair (LDAR) program equivalent to 40 CFR 60, Subpart VV.

Periodic Monitoring

VOC

In order to indicate compliance with the water levels in the seal pot, the facility is required to monitor the seal pots monthly and record the results of the inspection. In order to indicate compliance with the VOC concentration of the water in the seal pot, the facility is required to measure and record the specific gravity and temperature of the water in the seal pot monthly. Based on the measurements, the facility calculates the VOC concentration based on a specific gravity versus methanol curve.

Compliance Assurance Monitoring (CAM)

Based on compliance assurance monitoring (CAM) applicability criteria, the facility has determined that two emission points would potentially be subject to CAM: J1-1 and J1-3. Each emission point is controlled by the T-Thermal incinerator. Since the emission points are currently subject to the requirements of ADEM Admin. Code r. 335-3-3-.05 (CISWI) and BACT, respectively, the current monitoring should provide a reasonable assurance of compliance. Therefore, the emission points would not be subject to the requirements of CAM.