AIR QUALITY DIVISION POLICY AND PROCEDURE

AQD-006 - Procedure for Determining Emission Units

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ISSUE

There has been a considerable amount of confusion and uncertainty among the regulated community and Air Quality Division (AQD) staff in determining what constitutes an emission unit. This applies to preparing applications for Permits to Install (PTI) and Renewable Operating Permits (ROP), as well as interpreting the applicability of various permit exemptions that contain the term "emission unit." This confusion exists because the term "emission unit" is defined differently in the air quality regulations. Also, emission unit is often referred to and considered to be synonymous with process, process equipment, process group, emission group, facility, source, plant, building, structure, installation, activity, etc., by various air pollution regulators and permit applicants. The above definitions are purposely vague to allow considerable flexibility in determining what constitutes an emission unit. It is a very complex process to determine the appropriate air pollution control strategy for the wide variety of processes that have the potential to emit air contaminants. This policy and procedure provides guidance for determining what constitutes an emission unit.

DEFINITIONS

The term "emission unit" is defined in the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Rule No. 105(b) as:

> "Any part of a stationary source that emits or has the potential to emit an air contaminant. Examples of emission units include the following:
>
> (i). A fossil fuel-fired steam generating unit.
> (ii). A topcoat painting line.
> (iii). A solid waste incinerator.
> (iv). A clinker cooler at a Portland cement plant.
> (v). A process unit at a chemical plant.

The term "emission unit" is also defined in the Title V - Part 70 Federal Permitting Regulations as:

> "Any part or activity of a stationary source that emits or has the potential to emit any regulated air pollutant, or any pollutant listed under Section 112(b) of the Act. This term is not meant to alter or affect the definition of the term "unit" for purposes of Title IV of the Act."

Michigan's ROP form instructions describe an emission unit/process group as:

> "A device or a group of devices that operate together with a dependency between devices. An emission unit contains one or more process devices and zero or more control devices and related stacks."

In the regulations implementing Section 112(j) of the federal Clean Air Act the term "emission unit" is defined as:

> "Any building, structure, or installation. This could include an emission point or a collection of emission points, within a major source, which the permitting authority determines is the appropriate entity for making a MACT determination under Section 112(j), i.e., any of the following:
>
> 1. An emission point that can be individually controlled.
> 2. The smallest grouping of emission points, that, when collected together, can be commonly controlled by a single control device or work practice.
> 3. Any grouping of emission points, that, when collected together, can be commonly controlled by a single control device or work practice.
> 4. A grouping of emission points that are functionally related. Equipment is functionally related if the operation or action for which the equipment was specifically designed cannot occur without being connected with or without relying on the operation of another piece of equipment.
> 5. The entire geographical entity comprising a major source in a source category subject to a MACT determination under Section 112(j)."

Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, Part 18 rules:

> Rule 336.2801 Definitions:
>
> Rule1801(r) "Emissions unit" means any part of a stationary source that emits or would have the potential to emit any regulated new source review pollutant and includes an electric utility steam generating unit. Both of the following are types of emissions units:
>
> (i) A new emissions unit is any emissions unit that is, or will be, newly constructed and that has existed for less than 2 years from the date the emissions unit first operated.
> (ii) An existing emissions unit is any emissions unit that does not meet the definition of a new emissions unit. A replacement unit is an existing emissions unit and no creditable emission reductions shall be generated from shutting down the existing emissions unit that is replaced. A replacement unit shall meet all of the following criteria:
>
> (A) The emissions unit is a reconstructed unit if the replacement of components of an existing facility is to such an extent that the fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new facility, or the emissions unit completely takes the place of an existing emissions unit.
> (B) The emissions unit is identical to or functionally equivalent to the replaced emissions unit.

(C) The replacement does not alter the basic design parameters of the process unit.
(D) The replaced emissions unit is permanently removed from the major stationary source, otherwise permanently disabled, or permanently barred from operation by a permit that is enforceable as a practical matter. If the replaced emissions unit is brought back into operation, it shall constitute a new emissions unit.

POLICY

The emission unit should be the smallest part of a stationary source that utilizes an air pollution control strategy, results in minimizing emissions and abatement costs, maximizes the production flexibility for the source, and ensures that the strategy is practically enforceable. By definition, implementing this policy requires engineering judgment and a knowledge of the source. An emission unit may be a single emission point (a piece of equipment or device) for which there exists an air pollution emission standard or consists of a grouping of emission points that have a common air pollution control device or are functionally related in their operation.

PROCEDURE

The objective of the following procedure is to provide a step-by-step methodology to guide and assist permit applicants and permit reviewers in determining what constitutes an emission unit in any particular circumstance. Determining what constitutes an emission unit applies to both Michigan's renewable operating and installation permitting programs.

Step	Who	Does What
1.	Permit Applicants and Permit Reviewers	Determining an emission unit. An emission unit should normally be an emission point when the point source category has been regulated as an "affected facility" by the Federal New Source Performance Standards (NSPS), the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) (including what is commonly referred to as the Maximum Achievable Control Technology (MACT) standards), the Prevention of Significant Deterioration (PSD), Nonattainment New Source Review (NNSR) rules and regulations, or the Michigan particulate and volatile organic compound (VOC) emission regulations. Examples of emission points which constitute an emission unit include: a coal-fired boiler, a solid waste incinerator, a clinker cooler at a Portland cement plant, a ferrous metal melting cupola, a halogenated solvent vapor degreaser, a chrome plating tank, and an ethylene oxide commercial sterilizer. Other common examples are listed in Appendix A.

Step	Who	Does What
2.	Permit Applicants and Permit Reviewers	Emission points that do not qualify as emission units per Step 1, may be combined into an emission unit consisting of the smallest grouping of emission points that can be commonly controlled by a single control device or work practice, and/or which have been regulated as an affected facility by an NSPS, NESHAPS, PSD, NNSR rules and regulations, or Michigan's particulate, or VOC emission regulations. Examples of these types of emission units include: a hot mix asphalt facility as defined by the NSPS, an automobile topcoat line, a material handling system with a baghouse, and a foundry sand shakeout line that is controlled by a wet scrubber. Other common examples are listed in Appendix B.
3.	Permit Applicants and Permit Reviewers	Emission points that do not qualify as emission units in Steps 1 or 2 may be combined into an emission unit consisting of all emission points which are functionally dependent and/or which have been regulated as an affected facility by an NSPS, NESHAPS, PSD, NNSR rules and regulations, or Michigan's particulate or VOC regulations. Equipment is functionally related if the operation or action for which the equipment was specifically designed could not occur without being connected with or relying on another piece of equipment. Examples of these types of emission units include: a sour gas sweetening plant, a fiberglass production line, a process unit at a chemical plant, and a coke oven battery. Other examples are listed in Appendix C.

Questions and Answers Regarding Emission Units:

Question 1: Is the definition of an emission unit pollutant specific (i.e., could you draw the emission unit boundaries differently for say particulate than you would for sulfur dioxide)?

Answer: No. Once an emission standard for a pollutant is established, it sets the boundaries of the emission unit for all pollutants.

Question 2: Does an applicable requirement that is a condition of a permit always establish an emission unit?

Answer: No. While permit conditions are frequently established at the emission unit level, they can also be established at a higher or lower level. The plant-wide VOC limit of Rule 205(3) is an example where the condition is established at a higher level. Requiring the use of a specific type of paint spray gun is an example of a condition that is established at a lower level.

Question 3: Why are process units at chemical plants considered an emission unit?

Answer: Process units at chemical plants are defined as emission units in Rule 105(b). A process unit means equipment assembled and connected by pipes or ducts to produce intermediate or final chemical products. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities. The various NSPS, MACT, and Reasonably Available Control Technology (RACT) regulations for chemical plants have all regulated chemical plants at different levels ranging from a component or point to an emission unit to an entire plant. The process unit was selected since it is the level that minimizes emissions and costs while maximizing flexibility.

This policy and procedure is intended to provide guidance to AQD staff to foster consistent application of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the administrative rules promulgated thereunder. This document is not intended to convey any rights to any parties nor create any duties or responsibilities under law. This document and matters addressed herein are subject to revision.

APPENDICES

APPENDIX A - Examples of Emission Units
APPENDIX B - Examples of Emission Units
APPENDIX C - Examples of Emission Units

APPROVING AUTHORITY

Annette Switzer, Director
Air Quality Division

HISTORY

Policy No.	Action	Date	Title
AQD-006	Effective	2/20/96	Procedure for Determining Emission Units
AQD-006	Reformatted	1/29/14	Procedure for Determining Emission Units
AQD-006	Revised	12/11/23	Procedure for Determining Emission Units

CONTACT/UPDATE RESPONSIBILITY

Any questions or concerns regarding this policy and procedure should be directed to Cindy Smith, Permit Section Manager, at SmithC17@Michigan.gov or 517-648-8404 or Brad Myott, Field Operations Manager, at MyottB@Michigan.gov or 517-294-9394.

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APPENDIX A
Examples of Emission Units

A fossil fuel-fired steam generating unit. (40 CFR, Part 60, Subpart D, Da, Db, Dc, 40 CFR Part 63 Subpart DDDDD and Rule 331)

A combined cycle or stationary gas turbine having heat input capacity of 73 MW or more. (40 CFR, Part 60, Subpart Da and GG)

A stationary reciprocating internal combustion engine at a major or area source of HAP emissions. (40 CFR Part 63 Subpart ZZZZ)

A solid or liquid waste incinerator. (40 CFR, Part 60, Subpart E, Ea, O, Rule 331)

A kiln or a clinker cooler at a Portland cement plant. (40 CFR, Part 60, Subpart E, Ea, O, Rule 331)

A nitric acid production unit. (40 CFR, Part 60, Subpart G)

A sulfuric acid production unit. (40 CFR, Part 60, Subpart H, Rule 404)

A fluid catalytic cracking unit catalyst regenerator, fuel gas combustion device, or Claus sulfur recovery plant of more than 20 long tons per day in a petroleum refinery plant. (40 CFR, Part 60, Subpart J)

A petroleum storage vessel with a capacity greater than 40,000 gallons. (40 CFR, Part 60, Subpart K; Rule 284)

A volatile organic liquid storage vessel with a capacity greater than 40 cubic meters (10,568 gallons). (40 CFR, Part 60, Subpart Kb)

A pot furnace of more than 550 lb. charging capacity, a blast (cupola) furnace, or a reverberatory furnace in a secondary lead smelter plant. (40 CFR, Part 60, Subpart L)

A reverberatory or an electric furnace of more than 2,205 lb production capacity or a blast (cupola) furnace of more than 550 lb/hr production capacity in a secondary brass or bronze production plant. (40 CFR, Part 60, Subpart M)

A basic oxygen process furnace. (40 CFR, Part 60, Subpart N and Na and Rule 331)

An incinerator that combusts wastes containing more than 10% municipal sewage sludge or charges more than 2,205 lb per day of municipal sewage sludge (dry basis). (40 CFR, Part 60, Subpart O, Rule 331)

A dryer, roaster, smelting furnace or copper converter at a primary copper smelter. (40 CFR, Part 60, Subpart P)

A roaster or a sintering machine in a primary zinc smelter. (40 CFR, Part 60, Subpart Q)

An electric arc furnace, or argon-oxygen decarburization system in a steel plant that produces carbon, alloy, or specialty steel. (40 CFR, Part 60, Subpart AA and AAa, Rule 331)

A recovery furnace at a Kraft pulp mill. (40 CFR, Part 60, Subpart BB)

A glass melting furnace designed to produce more than 4,550 kilograms of glass per day. (40 CRF, Part 60, Subpart CC)

A dryer, washer, filter, still, or settling tank at a petroleum dry cleaning plant with a total rated dryer capacity of greater than 84 lbs. (40 CFR, Part 60, Subpart JJJ)

A grain dryer. (40 CFR, Part 60, Subpart DD)

An individual drain system, oil-water separator or aggregate facility at a petroleum refinery wastewater System. (40 CFR, Part 60, Subpart QQQ)

A spray booth at surface coating facilities for plastic parts for business machines. (40 CFR, Part 60, Subpart TTT)

A chromium electroplating tank, decorative chromium electroplating tank, chromic acid anodizing tank. (40 CFR, Part 63, Subpart N, Sections 340-347, Final 11/23/94)

A degreaser. (40 CFR, Part 63, Rules 612, 614, 708, 710)

A cold cleaner. (40 CFR, Part 63, Rules 611, 613, 707, 709)

An industrial cooling tower that is operated with chromium-based water treatment chemicals (40 CFR, Part 63, Subpart Q)

An ethylene oxide sterilization system. (40 CFR, Part 63, Subpart O)

A perchloroethylene dry cleaning machine. (40 CFR, Part 63, Subpart M)

A depainting booth or hangar, or a primer or topcoat application spray booth or hangar in an aerospace coating facility. (40 CFR, Part 63, Subpart GG)

A cold feed aggregate bin, a liquid asphalt storage tank, or an asphalt concrete storage silo at an asphalt concrete production plant. (Rule 289)

A cupola or electric arc furnace at a ferrous foundry. (Rule 331)

A lime kiln or a gypsum calciner. (Rule 331)

An iron ore pelletizing kiln. (Rule 331)

An ammoniator/granulator at a fertilizer plant. (Rule 331)

APPENDIX B
Examples of Emission Units

A sintering plant discharge operation in a steel manufacturing plant. (Rule 331)

A raw mill system, a finish mill system, a raw material storage system, a clinker storage system, a finished product storage system, a bagging system, a bulk loading system, or a bulk unloading system at a Portland cement plant. (40 CRF, Part 60, Subpart F)

A refuse derived fuel processing line.

A hot mix asphalt facility. (40 CFR, Part 60, Subpart I)

An unloading station, loading station, or a grain handling operation at a grain terminal elevator or grain storage elevator. (40 CFR, Part 60, Subpart DD)

A concrete mixing facility.

A sewage treatment plant excluding the sewage sludge incinerators or a sludge dryer.

A digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system at a Kraft pulp mill. (40 CFR, Part 60, Subpart BB)

A grid casting facility, paste mixing facility, three-process operation facility, lead oxide manufacturing facility, lead reclamation facility or other lead-emitting operation at a lead-acid battery manufacturing plant. (40 CFR, Part 60, Subpart KK)

A graphic arts line. (Rule 624)

An automobile topcoat line. Each line includes the coating application station(s), flash off areas, and curing ovens. (Rule 610)

A metal furniture coating line. (Rule 610)

A paper coating line. (Rule 610)

A flat wood paneling coating line. (Rule 620)

A coil coating line. (Rule 610)

A new (11-28-80) metal furniture surface coating operation (prime or topcoat line). (40 CFR, Part 60, Subpart EE)

A paint mixing and storage system.

A scarfing operation in a steel manufacturing plant. (Rule 331)

A wood sawdust handling system. (Rule 331)

A metal grinding operation. (Rule 331)

A rotogravure printing line used to print or coat flexible vinyl or urethane products. (40 CFR, Part 60, Subpart FFF)

An adhesive or other coating line in the pressure sensitive tape and label materials manufacturing plant. (40 CFR, Part 60, Subpart RR)

The total of all loading racks at a bulk gasoline terminal. (40 CFR, Part 60, Subpart XX)

APPENDIX C
Examples of Emission Units

A rotary spin wool fiberglass insulation manufacturing line. (40 CFR, Part 60, Subpart PPP)

A natural gas processing plant. (Rule 629)

A process unit at a chemical plant. (40 CFR, Part 60, Subpart NNN)

A paint manufacturing system including stationary and portable mixing tanks, high speed dispersion mills, and equipment cleanup.

A beryllium processing facility including foundry and machine shop. (40 CFR, Part 61, Subpart C)

A manufacturing process using commercial asbestos. (40 CFR, Part 61, Subpart M)

A nonmetallic mineral production line. (40 CFR, Part 60, Subpart 000)