

Ohio EPA

Division of Air Pollution Control

Engineering Guide #31

**Question:**

When should process units at a facility be grouped in accordance with the provisions of paragraph (A)(3) of OAC rule 3745-17-11 for purposes of determining compliance with the particulate emission limitations prescribed in Figure II of this rule?

(This question was previously answered in the now defunct Policy Guideline Series. The policy expressed in that guideline has been updated and is hereby reissued as an engineering guide.)

**Answer:**

Paragraph (A)(3) of OAC rule 3745-17-11, which indicates when process units must be grouped in order to determine compliance with the emission limitations prescribed in Figure II of paragraph (B) of this rule, reads as follows:

'For purposes of "Figure II," the total uncontrolled mass rate of emission from all similar process units at a plant, such units being united either physically or operationally, or otherwise located in close proximity to each other, shall be used for determining the maximum allowable mass rate of particulate emissions that pass through a stack or stacks from all such units.'

The above rule indicates that there are two criteria that must be met for process units to be grouped for purposes of determining the uncontrolled mass rate of emission (UMRE) for use in Figure II. First, the process units must be similar. Second, they must meet at least one of the following conditions: they must be either physically united, operationally united, or located in close proximity to each other. This Guide will define what is meant by the above underlined terms, so that "grouping" determinations may be more easily and consistently made by the field offices.

One important point which must be stressed is that any existing process unit with an UMRE of less than ten pounds per hour is not to be grouped with other process units, regardless of their individual or total UMRE. Figure II is not applicable to such a process unit. Table I of OAC rule 3745-17-11 should be used to determine the allowable emission rate for such a process unit. This point should be kept in mind when reading and using the guidance set forth in the following discussion.

This Guide will not attempt to give specific examples of where process units in certain industries should be grouped. It will, however, define, from an engineering standpoint, the terms "similar," "physically united," "operationally united," and "close proximity." It is hoped that such definitions will aid the field offices in applying OAC rule 3745-17-11.

The definitions of the above terms as they relate to the grouping of process units are as follows:

Criterion 1: Process units are similar if:

- (a) their construction\* and operation are essentially the same;
- (b) the basic physical and/or chemical processes occurring in each unit are essentially the same; and
- (c) the same general types of products are produced.

\* the capacities of the units do not have to be the same

Criterion 2: The process units must also meet at least one of the following conditions: physically united, operationally united, or in close proximity.

(a) Process units are physically united if there is some tangible connection among them such as:

- (1) support structures,
- (2) stacks or ducting,
- (3) pollution control equipment,
- (4) raw material feeding mechanisms,
- (5) product handling systems, or
- (6) waste disposal mechanisms.

(b) Process units are operationally united if:

- (1) one unit's operation or production capability is dependent upon, or limited by, another unit's operation;
- (2) common, ancillary facilities such as pollution control equipment, raw material feeding mechanisms, product handling systems or waste disposal mechanisms limit the total production capacity of all similar units to a level that is less than the sum of the maximum capacities of all the units; or

(3) they share a common process control system from which all process units are operated.

(c) Process units are in close proximity if they are close enough to each other that they could be connected by ducting to a common pollution control device in an efficient and effective manner as determined by good engineering practice.

There are several specific points where this Guide needs further clarification. Some of those points which have been brought to the attention of DAPC are discussed in the following:

(1) Application of the allowable emission rate obtained by the grouping of process units: The allowable emission rate obtained from the grouping of process units in Figure II of OAC rule 3745-17-11 is the total allowable emission rate for all of the process units combined. The allowable emission rate is determined based on the combined maximum UMRE. In order to determine compliance, the sum of the actual emission rates from each of the process units must be less than or equal to such allowable emission rate obtained from Figure II. The combined allowable emission rate should be identified in the permit for each affected emissions unit in a form such as “XX lbs PE/hr combined for emissions units P001, P002, P003, and P004.”

(2) Application of the process unit grouping criteria in cases where one or more of the units do not operate at the same time and/or do not operate at their maximum process weight rates because of physical or operational limitations: In such cases, the total UMRE of the operating unit or combination of operating units shall be determined based on the restricted process weight rate, and the resulting restricted UMRE shall be used in determining the allowable emission rate from Figure II. The restricted process weight rate obtained in this manner will be less than the sum of the maximum process weight rates for all units combined. However, the entity must demonstrate that there is a physical or operational limitation that prevents the total maximum process weight rate from being equal to the sum of the individual maximum process weight rates for all units. The following example will illustrate the use of this guidance.

Assume a situation where the following process units are to be considered for grouping:

	[A]	[B]	[C]	Total [B] & [C] only
Maximum UMRE (lbs/hr)	6	12	15	27
Maximum Process Weight Rate (tons/hr)	4	8	10	18

The individual maximum UMREs and process weight rates are given. Since emissions unit A has an UMRE of less than ten pounds per hour, it is excluded from this analysis, and Table I of OAC rule 3745-17-11 is used to obtain its allowable emission rate. Because of physical or operational limitations, only the following operating combinations and process weight rates are attainable:

Operating Combination	Sum of Individual Maximum Process Weight Rates (tons/hr)	Maximum Achievable Process Weight Rate (tons/hr)
B only	8	8
C only	10	10
B & C	18	12

Therefore, the restricted process weight (12 tons/hr) occurs in the operating situation with emissions units B and C operating. The UMRE at this restricted process weight rate is then used to determine the allowable emission rate from Figure II of rule 3745-17-11, as shown in the following table:

	Total [B] & [C]	Figure II allowable (lbs PE/hr)
Restricted Combined UMRE (lbs/hr)	22 (assumed value)	4.25 (curve P-1)
Restricted Combined Process Weight Rate (tons/hr)	12	NA

The restricted combined UMRE and the restricted combined maximum process weight rate that are determined through this analysis should be included in the Special Terms and Conditions of a PTIO, FEPTIO, PTI (Title V facilities only), or Title V operating permit for each affected emissions unit.

It should also be noted that the above analysis is not a derating of process units, since physical or operational limitations must be established in permit terms for derated emissions units.

- (3) Application of this Guide to the addition of new process unit(s) to an existing unit or a grouping of process units: In such cases, the previously applicable allowable emission rate obtained from Figure II remains applicable to the existing grouping of process units. With the addition of one or more new process units to one or a grouping of existing process units, a new allowable emission rate is obtained from Figure II by using the sum of the maximum UMREs from the new unit(s) plus the existing unit or grouping of units. This new allowable emission rate would then be applicable to all the units, and the new unit would also have to be controlled so that the actual emissions from all

units would not exceed the new allowable emission rate. The permits for the existing emissions units would contain only the previously applicable allowable emission rate. The permit(s) for the new emissions unit(s) would contain only the new allowable emission rate.

- (4) Application of this Guide to a situation where an existing unit of a grouping of process units is physically modified to increase capacity and requires a Chapter 3745-31 permit modification: In this situation, two new allowable emission rates are determined. One allowable emission rate is determined for the existing (unmodified) units as described in (7) below, where the “modified” emissions unit would be considered as being shut down. The second allowable emission rate is based upon the maximum UMRE for all units combined and is determined identically to (3) above, where the “modified” emissions unit would be addressed the same as a “new” emissions unit. The combined UMRE would be adjusted based on the capacity modifications to the affected units. The permits for the unmodified emissions units would contain only the new allowable emission rate for just those emissions units. The permit(s) for the “modified” emissions unit(s) would contain only the new allowable emission rate for all of the emissions units (modified and unmodified).
- (5) Application of this Guide to a situation where one or more existing units of a grouping of process units is either increased in capacity (without a Chapter 3745-31 permit modification being required) or is decreased in capacity: In such cases, a new allowable emission rate is found by using the sum of the maximum UMREs for all the units combined, adjusting for the capacity modifications to the affected units, and applied as described in (1) above.
- (6) Application of this Guide to a situation where one or more existing units of a grouping of process units is replaced with a new unit, or units, of different or identical capacities: This situation is similar to (3) above, and the same analysis would apply, except that the allowable emission rate for the existing emissions units (excluding the emissions unit(s) replaced) must be recalculated using the sum of their maximum UMREs in Figure II.
- (7) Application of this Guide to a situation where one or more existing units of a grouping of process units is shut down: In such cases, a new allowable emission rate is determined for the remaining units by using the sum of their maximum UMREs in Figure II.
- (8) What procedure is to be followed for process units on an operating permit or registration status that have not been grouped as required by OAC rule 3745-17-11? In cases where the grouping provision has not been applied as required, or has been incorrectly applied, and the process units are under effective operating permits or registration status, the following policy should be adhered to:

- (a) An operating permit should be administratively modified to include the correct combined allowable limit. If the entity is not in compliance with the emission limitation using the grouping provision, the situation should be brought to the entity's attention as quickly as possible so that negotiations can begin to legally resolve the problem. If the entity does not cooperate, an enforcement referral should be sent to DAPC Central Office.
  - (b) Registration status should be reevaluated. If the entity is in compliance with the emission limitation using the grouping provision, the registration status can remain, if appropriate. If the entity is not in compliance with the emission limitation using the grouping provision, the situation should be brought to the entity's attention as quickly as possible so that negotiations can begin to legally resolve the problem. The entity should be required to achieve compliance as expeditiously as possible. Also, the registration status may be removed with the processing of the appropriate PTIO or FEPTIO. If the entity does not cooperate, an enforcement referral should be sent to DAPC Central Office.
- (9) What procedure should be followed for those entities whose process units cannot comply with the grouping provision because the allowable emission rate so obtained requires an unreasonable level of control? Such entities should apply for variances if they can comply with the requirements of OAC rule 3745-31-09. Variances can be granted only for existing emissions units (installed prior to 1974).

For each of the situations noted above where a new allowable emission limit is established for the group of process units, the permits for the existing emissions units would need to be administratively modified to include the new allowable emission limit for the group of process units, in addition to issuing the permits for new emissions units and the Chapter 3745-31 permit modifications.

TK/JB

(Issued December 18, 1981; revised and updated December 9, 2009)