

Ohio EPA

Division of Air Pollution Control

Engineering Guide #32

**Question:**

Can an entity apply for and obtain a variance, as provided under OAC rule 3745-31-09, from the visible emission requirements found in paragraphs (A) and/or (B) of OAC rule 3745-17-07?

(This question was submitted by Fred Klingelhafer of the Southeast District Office on December 17, 1980.)

**Answer:**

First, it should be noted that a variance permit can only be issued for an emissions unit located at a facility that is not subject to Title V permitting. For emissions units that are located at a Title V facility, the facility must seek a rule change and a SIP revision prior to incorporating any modified opacity requirements into the Title V permit. The remainder of this Guide is relevant only to emissions units located at minor facilities, i.e., non-Title V facilities.

Generally, the equivalent visible emission limitation (EVEL) provisions of paragraph (C) of OAC rule 3745-17-07 will apply to situations where a facility has problems complying with the opacity limit such that a variance is not needed (refer to Engineering Guides #13 through #15). In two specific situations, however, an entity may apply for and obtain a variance, for "existing" (installed prior to 1974) particulate emissions units only, from the visible emission limitation(s) found in paragraph(s) (A) and/or (B) of OAC rule 3745-17-07, if the entity complies with the requirements of OAC rule 3745-31-09. The two situations are as follows:

1. It is technically infeasible and/or economically unreasonable for the entity to conduct emission tests in accordance with OAC rule 3745-17-03 to determine the actual particulate emission rate. [Please note that an EVEL cannot be obtained without the performance of emission tests under the provisions of paragraph (C)(1) of OAC rule 3745-17-07 since this rule explicitly requires that an EVEL be determined during any performance test(s) conducted pursuant to paragraph (B) of OAC rule 3745-17-03.]

2. The entity is requesting a permanent higher particulate emission limitation (which was determined by emission testing) and a visible emission limitation that corresponds to such "relaxed" mass emission limitation.

The two situations noted above are the only situations in which a variance can be requested to adjust the opacity limit. In all other situations, the EVEL provisions of paragraph (C) of OAC rule 3745-17-07 should be used instead of applying for a variance.

*The situation in item (1)* above would be handled by first estimating the actual maximum particulate emission rate by the best available method (e.g., emission factors or material balance calculations). See Engineering Guide #28 for assistance in determining the uncontrolled mass rate of emissions. If a control device is used, multiply the estimated uncontrolled mass rate of emissions by the capture efficiency and then multiply by (1 – control efficiency expressed as a decimal fraction) to determine the estimated stack outlet emission rate. Fugitive emissions can be calculated by multiplying the uncontrolled emissions by (1 – capture efficiency expressed as a decimal fraction). The capture efficiency should be based on either a material balance determination or best engineering judgment. The control efficiency should be based on either mass balance or the design control efficiency provided by the manufacturer of the control device.

If the emissions unit is determined to be in compliance with the applicable particulate emission limitation based on the calculation performed above, then the opacity limit could be determined based on observation of the opacity from the emissions unit during operation at the maximum process weight rate used in the above emission calculation. The calculated maximum particulate emission rate, the maximum process weight rate used in the emission calculation, and the corresponding observed opacity level(s) should be inserted in the Special Terms and Conditions (STCs) of the variance.

If the emissions unit is estimated to be in violation of the applicable particulate emission limitation from the calculation above, then the entity may request a variance that specifies the estimated actual maximum emission rate as a permanent higher particulate emission limitation, the maximum process weight rate used in the emission calculation, and the corresponding visible emission limitation, all of which would be inserted in the STCs of the variance. For uncontrolled emissions units, the facility would also have to demonstrate that add-on controls are both technically and economically infeasible for achieving compliance. The visible emission limitation would correspond to the new "relaxed" mass emission limitation and would be based on actual opacity observations during operation of the emissions unit at the maximum process weight rate used in the above, maximum particulate emission calculation.

The situation in item (2) would be handled by issuing a variance that specifies the permanent higher particulate emission limitation(s) (**as determined by emission testing**) and the corresponding visible emission limitation (based on observation of the opacity from the emissions unit during the emission tests) in the STCs of the variance.

TK/JO/JB

(Issued January 14, 1982; revised December 14, 2009)