R307. Environmental Quality, Air Quality.
R307-410. Permits: Emissions Impact Analysis.
...

R307-410-3. Use of Dispersion Models.

All estimates of ambient concentrations derived in meeting the requirements of R307 shall be based on appropriate air quality models, data bases, and other requirements specified in 40 CFR Part 51, Appendix W, [~~(~~] Guideline on Air Quality Models [~~)~~], [~~ effective July 1, 2018,~~] which is hereby incorporated by reference. Where an air quality model specified in the Guideline on Air Quality Models or other EPA approved guidance documents is inappropriate, the director may authorize the modification of the model or substitution of another model. In meeting the requirements of federal law, any modification or substitution will be made only with the written approval of the Administrator, EPA.

...

R307-410-5. Documentation of Ambient Air Impacts for Hazardous Air Pollutants.

(1) Prior to receiving an approval order under R307-401, a source shall provide documentation of increases in emissions of hazardous air pollutants as required under (c) below for all installations not exempt under (a) below.

(a) Exempted Installations.

(i) The requirements of R307-410-5 do not apply to installations which are subject to or are scheduled to be subject to an emission standard promulgated under 42 U.S.C. 7412 at the time a notice of intent is submitted, except as defined in (ii) below. This exemption does not affect requirements otherwise applicable to the source, including requirements under R307-401.

(ii) The director may, upon making a written determination that the delay in the implementation of an emission standard under R307-214-2, that incorporates 40 CFR Part 63, might reasonably be expected to pose an unacceptable risk to public health, require, on a case-by-case basis, notice of intent documentation of emissions consistent with (c) below.

(A) The director will notify the source in writing of the preliminary decision to require some or all of the documentation as listed in (c) below.

(B) The source may respond in writing within thirty days of receipt of the notice, or such longer period as the director approves.

(C) In making a final determination, the director will document objective bases for the determination, which may include public information and studies, documented public comment, the applicant's written response, the physical and chemical properties of emissions, and ambient monitoring data.

(b) Lead Compounds Exemption. The requirements of R307-410-5 do not apply to emissions of lead compounds. Lead compounds shall be evaluated pursuant to requirements of R307-410-4.

(c) Submittal Requirements.

(i) Each applicant's notice of intent shall include:

(A) the estimated maximum pounds per hour emission rate increase from each affected installation,

(B) the type of release, whether the release flow is vertically restricted or unrestricted, the maximum release duration in minutes per hour, the release height measured from the ground, the height of any adjacent building or structure, the shortest distance between the release point and any area defined as "ambient air" under 40 CFR 50.1(e),[~~ effective July 1, 2018,~~] which is hereby incorporated by reference for each installation for which the source proposes an emissions increase,

(C) the emission threshold value, calculated to be the applicable threshold limit value - time weighted average (TLV-TWA) or the threshold limit value - ceiling (TLV-C) multiplied by the appropriate emission threshold factor listed in Table 2, except in the case of arsenic, benzene, beryllium, and ethylene oxide which shall be calculated using chronic emission threshold factors, and formaldehyde, which shall be calculated using an acute emission threshold factor. For acute hazardous air pollutant releases having a duration period less than one hour, this maximum pounds per hour emission rate shall be consistent with an identical operating process having a continuous release for a one-hour period.

TABLE 2
EMISSION THRESHOLD FACTORS FOR HAZARDOUS AIR POLLUTANTS
(cubic meter pounds per milligram hour)

VERTICALLY-RESTRICTED AND FUGITIVE EMISSION RELEASE POINTS

DISTANCE TO PROPERTY BOUNDARY	ACUTE	CHRONIC	CARCINOGENIC
20 Meters or less	0.038	0.051	0.017
21 - 50 Meters	0.051	0.066	0.022
51 - 100 Meters	0.092	0.123	0.041
Beyond 100 Meters	0.180	0.269	0.090

VERTICALLY-UNRESTRICTED EMISSION RELEASE POINTS

DISTANCE TO PROPERTY BOUNDARY	ACUTE	CHRONIC	CARCINOGENIC
50 Meters or less	0.154	0.198	0.066
51 - 100 Meters	0.224	0.244	0.081
Beyond 100 Meters	0.310	0.368	0.123

(ii) A source with a proposed maximum pounds per hour emissions increase equal to or greater than the emissions threshold value shall include documentation of a comparison of the estimated ambient concentration of the proposed emissions with the applicable toxic screening level specified in (d) below.

(iii) A source with an estimated ambient concentration equal to or greater than the toxic screening level shall provide additional documentation regarding the impact of the proposed emissions. The

director may require such documentation to include, but not be limited to:

(A) a description of symptoms and adverse health effects that can be caused by the hazardous air pollutant,

(B) the exposure conditions or dose that is sufficient to cause the adverse health effects,

(C) a description of the human population or other biological species which could be exposed to the estimated concentration,

(D) an evaluation of land use for the impacted areas,

(E) the environmental fate and persistency.

(d) Toxic Screening Levels and Averaging Periods.

(i) The toxic screening level for an acute hazardous air pollutant is 1/10th the value of the TLV-C, and the applicable averaging period shall be:

(A) one hour for emissions releases having a duration period of one hour or greater,

(B) one hour for emission releases having a duration period less than one hour if the emission rate used in the model is consistent with an identical operating process having a continuous release for a one-hour period or more, or

(C) the dispersion model's shortest averaging period when using an applicable model capable of estimating ambient concentrations for periods of less than one hour.

(ii) The toxic screening level for a chronic hazardous air pollutant is 1/30th the value of the TLV- TWA, and the applicable averaging period shall be 24 hours.

(iii) The toxic screening level for all carcinogenic hazardous air pollutants is 1/90 the value of the TLV-TWA, and the applicable averaging period shall be 24 hours, except in the case of formaldehyde which shall be evaluated consistent with (d)(i) above and arsenic, benzene, beryllium, and ethylene oxide which shall be evaluated consistent with (d)(ii) above.

...

KEY: air pollution, modeling, hazardous air pollutant, stack height
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