

PART 5: STANDARDS FOR TOXIC AIR CONTAMINANTS AND HAZARDOUS AIR POLLUTANTS

REGULATION 5.00 Definitions

Louisville Metro Air Pollution Control District Jefferson County, Kentucky

Pursuant To: KRS Chapter 77 Air Pollution Control

Relates To: KRS Chapter 77 Air Pollution Control

Necessity And Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation defines terms used in the Strategic Toxic Air Reduction Program.

SECTION 1 Definitions

The following definitions apply to Part 5 of the District's regulations and to Regulation 1.06 Section 5. Terms not defined in this regulation shall have the meaning given to them in Regulation 1.02.

- 1.1 "Acute noncancer effect" means a biochemical change, functional impairment, or pathological lesion that is produced within a short period of time following an exposure and that affects the performance of the whole organism, or reduces the organism's ability to respond to additional environmental challenges.
- 1.2 "Benchmark ambient concentration" (BAC) means the concentration of a toxic air contaminant (TAC) that is determined pursuant to Regulation 5.20 to meet the environmental acceptability goals of Regulation 5.21.
 - 1.2.1 The benchmark ambient concentration for a carcinogen (BAC_C) is the concentration of a TAC that represents an additional lifetime cancer risk of one in one million (1×10^{-6}).
 - 1.2.2 The benchmark ambient concentration for the noncarcinogenic effects of a TAC (BAC_{NC}) is the concentration of a TAC at or below which no adverse effects are expected. The BAC_{NC} represents a Hazard Quotient of 1.0.
- 1.3 "Best available technology for toxics" (T-BAT) means an emission standard that reflects the maximum reduction in emissions of, and risk from, a TAC that the District determines can reasonably be achieved by a process or process equipment, taking into account energy, environmental, and economic impacts and other costs, and health and welfare benefits. T-BAT may include one or more of the following:
 - 1.3.1 work practices,
 - 1.3.2 raw material substitutions,
 - 1.3.3 alternative processes and process design characteristics,
 - 1.3.4 air pollution control equipment,
 - 1.3.5 pollution prevention measures,
 - 1.3.6 equipment maintenance measures (including leak detection and repair), and
 - 1.3.7 upset condition prevention measures.
- 1.4 "Cancer" means a disease of heritable, somatic mutations affecting cell growth and differentiation, characterized by an abnormal, uncontrolled growth of cells.
- 1.5 "Carcinogen" means an agent capable of inducing cancer.

- 1.6 “Category 1 TAC” means a toxic air contaminant listed in Regulation 5.23 Section 1.
- 1.7 “Category 2 TAC” means a toxic air contaminant listed in Regulation 5.23 Section 2.
- 1.8 “Category 3 TAC” means a toxic air contaminant listed in Regulation 5.23 Section 3.
- 1.9 “Category 4 TAC” means a toxic air contaminant listed in Regulation 5.23 Section 4.
- 1.10 “Chronic noncancer effect” means a biochemical change, functional impairment, or pathological lesion that occurs as a result of repeated or long term exposure and that affects the performance of the whole organism, or reduces the organism’s ability to respond to additional environmental challenges.
- 1.11 “De minimis emission” means the TAC emissions described in Regulation 5.21 Section 2.
- 1.12 “Environmentally acceptable” or “environmental acceptability” (EA) means the ambient concentration of a TAC, or the sum of the ambient concentrations of multiple TACs, that is less than or equal to the ambient goals established in Regulation 5.21 (EA goals).
- 1.13 “Exempt stationary source” means a stationary source with one or more of the following processes or process equipment:
 - 1.13.1 A gasoline dispensing facility subject to Regulation 6.40.
 - 1.13.2 A solvent metal cleaner with a secondary reservoir subject to Regulation 6.18.
 - 1.13.3 A motor vehicle refinishing operation subject to Regulation 6.44 or Regulation 7.79.
 - 1.13.4 A dry cleaner.
 - 1.13.5 A stationary source that has applied for an operating permit in accordance with Regulation 2.17 with emission limits that do not exceed the following:
 - 1.13.5.1 25 tons per year of a regulated air pollutant;
 - 1.13.5.2 5 tons per year of a hazardous air pollutant (HAP); and
 - 1.13.5.3 12.5 tons per year of combined HAPs.
- 1.14 “Existing Group 1 or 2 source” means a Group 1 or 2 stationary source that was in operation on July 1, 2005.
- 1.15 “Existing process or process equipment” means a process or process equipment for which the District received an administratively complete construction permit application before July 1, 2005.
- 1.16 “Group 1 stationary source” means a stationary source that is not an Exempt stationary source and has an operating permit issued pursuant to Regulation 2.16.
- 1.17 “Group 2 stationary source” means a stationary source that is not a Group 1 or Exempt stationary source, and has an operating permit issued pursuant to Regulation 2.17.
- 1.18 “Hazard quotient” (HQ) means the ratio between the concentration of a TAC and the BAC_{NC} for that TAC.
- 1.19 “Industrial property” means property on which non-residential, non-retail, non-agricultural activities are conducted, including:
 - 1.19.1 manufacturing,
 - 1.19.2 power generation,
 - 1.19.3 industrial research and development,
 - 1.19.4 petroleum bulk storage,
 - 1.19.5 a permitted solid waste disposal facility,
 - 1.19.6 a rail line or railroad switch yard,
 - 1.19.7 a public airport, except for areas to which the general public has unrestricted access,
 - 1.19.8 docks, loading and unloading areas, and other appurtenances, areas or structures related to receiving and shipping materials via the Ohio River, whether or not at a permitted stationary source.

- 1.20 “New or modified process or process equipment” means a process or process equipment for which the District received an administratively complete construction permit application on or after July 1, 2005, and the permitted activity would result in either:
- 1.20.1 An increase in the amount of any Category 1 - 4 TAC emitted by that process or process equipment above a de minimis level defined in Regulation 5.21 Section 2, or
- 1.20.2 The emission of any TAC not previously emitted by the process or process equipment above a de minimis level defined in Regulation 5.21 Section 2 that the District determines does not meet the general duty clause of Regulation 5.01.
- 1.21 “Peer review” means a documented, in-depth assessment of the assumptions, calculations, extrapolations, alternate interpretations, methodology, acceptance criteria, and conclusions pertaining to a specific scientific or technical work product and its supporting documentation. A peer review shall:
- 1.21.1 Be conducted by qualified organizations or individuals who are independent of, but collectively at least equivalent in technical expertise to, those who performed the original work, and
- 1.21.2 Assess whether the evaluated activities were technically adequate, competently performed, properly documented, and satisfied quality control requirements.
- 1.22 “Permitted stationary source” means a stationary source that has an operating permit pursuant to Regulation 2.03.
- 1.23 “STAR” means the Strategic Toxic Air Reduction program found in Chapter 5 of the District’s regulations.
- 1.24 “Toxic air contaminant” (TAC) means any air contaminant for which there is no national ambient air quality standard and that is, or may become, harmful to public health or the environment when present in sufficient quantities and duration in the ambient air. As used in these regulations, toxic air contaminant does not include the substances listed in Regulation 5.23.
- 1.25 “Toxic air pollutant” (TAP) means a substance listed in either 401 KAR 63:021 (11-11-86) or 401 KAR 63:022 (11-11-86).
- 1.26 “Target-organ-specific hazard index” (TOSHI) means the sum of the Hazard Quotients for the toxic air contaminant that may cause an adverse effect to the same target organ or same major effect. Adverse effect by target organ includes hepatic, renal, respiratory, cardiovascular, gastrointestinal, hematological, musculoskeletal, and dermal/ocular effects. Major effect categories include neurotoxicity, developmental toxicity, reproductive toxicity, and immunotoxicity. Because a TAC may affect more than one target organ or major effect category, the determination of a TOSHI prompted by the emission of one TAC may require determining multiple TOSHIs for multiple target organs or major effect categories.
- 1.27 “Toxics Release Inventory” (TRI) is a publicly available database, maintained by EPA, containing information reported annually by certain source sectors on toxic chemical releases and waste management activities.

SECTION 2 Acronyms

The following acronyms, used in these regulations, have the following meanings:

ATSDR	Agency for Toxic Substances and Disease Registry
BAC	Benchmark ambient concentration
BAC _C	Benchmark ambient concentration for a carcinogen
BAC _{NC}	Benchmark ambient concentration for noncarcinogenic effects
BAC _{NCA}	Benchmark ambient concentration for acute noncarcinogenic effects
BACT	Best available control technology
EA	Environmental acceptability, environmentally acceptable
EAG _C	Environmental acceptability goal for carcinogenic risk
EAG _{NC}	Environmental acceptability goal for noncarcinogenic risk
EPA	Environmental Protection Agency
HAP	Hazardous air pollutant
HQ	Hazard quotient
IARC	International Agency for Research on Cancer
IRIS	Integrated Risk Information System
IRSL	Initial risk screening level
ISC3	Industrial Source Complex Model
ITSL	Initial threshold screening level
LC50	Lethal concentration, 50% mortality
LD50	Lethal dose, 50% mortality
LOAEL	Lowest observed adverse affect level
MACT	Maximum achievable control technology
MSDS	Material Safety Data Sheet
NOAEL	No observed adverse effect level
NSPS	New Source Performance Standards
OEL	Occupational exposure level
OSHA	Occupational Health and Safety Administration
PTE	Potential to emit
RAIMI	Regional Air Impact Modeling Initiative
REL	Reference exposure level
RfC	Reference concentration
RfD	Reference dose
RSEI	Risk-Screening Environmental Indicators
STAR	Strategic Toxic Air Reduction
TAC	Toxic air contaminant
TAP	Toxic air pollutant
T-BAT	Best available technology for toxics
TLV	Threshold limit value
TOSHI	Target-organ-specific hazard index
TRI	Toxics Release Inventory
TSP	Total suspended particulates
UF	Uncertainty factor
URE	Unit risk estimate

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