

Louisville Metro Air Pollution Control District STAR FAQs



The Strategic Toxic Air Reduction (STAR) Program reduces emissions of toxic chemicals from local industry beyond what is required by federal law. It was enacted in 2005 in response to the West Louisville Air Toxics Study, which monitored emissions of toxic chemicals in neighborhoods around Louisville’s Rubbertown chemical manufacturing complex. It assesses the risk posed by each chemical and sets health-based limits on emissions of toxic air chemicals.

For chemicals that may possibly cause cancer, the program establishes an environmental acceptability goal risk level of “one in one million”, i.e., “a likelihood that one person, out of one million people that are exposed to the same concentration of the same pollutant, would contract cancer if exposed continuously (24 hours per day) to that specific concentration over 70 years (an assumed lifetime),” to people who live, work, and play in the surrounding community from each chemical emitted by a single process at a company.¹ For emissions of all chemicals emitted by all of a company’s operations, the cumulative environmental acceptability goal is 7.5 in a million in the surrounding community. Emissions of chemicals on roadway or other industrial properties are adjusted by 10, i.e., 10 in a million for a single chemical from a single process, 75 in a million from all chemicals from all processes.

Companies must tell the APCD which chemicals they are using, the maximum amount they may potentially emit, and where exactly those emissions occur at their facility for every process they operate. A sophisticated computer model is used to determine the point on both industrial and non-industrial properties where the maximum exposure occurs. That amount is compared to internationally and nationally recognized risk assessment authorities to evaluate whether a company’s emissions meet the environmental acceptability goals. If the company’s emissions meet the goals, no further action is needed. If emissions of a toxic chemical exceed an environmental acceptability goal, the company may submit a plan to the APCD to meet the STAR health risk goals within a specified timeframe, request a modification of the program’s goals, or the APCD can impose a risk reduction plan. Opportunities for public participation – public review and comment and public hearings – are required for each of these determinations. When a facility demonstrates that its emissions meet the EA goals or if the APCD approves a compliance plan, a request for modification, or a risk reduction plan, the District issues a permit with conditions designed to ensure compliance. Final determinations by the District may be appealed under APCD Regulation 1.19.

¹Risk of “one in one million” defined at <https://www.epa.gov/national-air-toxics-assessment/nata-frequent-questions#risk1>.

Louisville Metro Air Pollution Control District STAR FAQs

Why is American Synthetic Rubber Company (ASRC) requesting a modification?

The APCD issued a Notice of Violation to ASRC in September 2015 for fugitive emissions of 1,3-butadiene that exceeded its previously approved limits. ASRC was required to re-evaluate its emissions and subsequently submitted a request for modification. ASRC has entered into an interim Agreed Board Order with the Air Pollution Control Board to take necessary measures to reduce its emissions of 1,3-butadiene. A final Agreed Board Order will be brought to the Board to fully resolve the Notice of Violation at a later date.

What is ASRC requesting for the surrounding community?

ASRC is *not* requesting a modification of the cumulative environmental acceptability goal for the surrounding community. ASRC has demonstrated that emissions of all of its chemicals, including 1,3-butadiene, from all of its operations in Rubbertown meet the cumulative environmental acceptability goal of 7.5 in a million in the surrounding community without any modification.

ASRC has requested a modification of the environmental acceptability goal of 1 in a million for two single processes – its flare and fugitive emissions – for emissions of 1,3-butadiene as follows:

- The flare – the requested goal is 1.93 in a million.
- Fugitive emissions – the requested goal is 4.12 in a million.

Emissions of these chemicals from these processes, along with emissions of all of the other chemicals ASRC emits from its operations, are included in the cumulative environmental acceptability goal of 7.5 in a million in the surrounding community.

What is ASRC requesting for roadway and industrial properties?

ASRC has requested a modification of the cumulative environmental acceptability goal of 75 in a million for roadway and industrial property as follows:

- Cumulative industrial/roadway – the requested goal is 100 in a million.

ASRC has also requested a modification of the environmental acceptability goal of 10 in a million for one single processes –fugitive emissions – for emissions of 1,3-butadiene as follows:

- Fugitive emissions – the requested goal is 90.56 in a million.

Emissions of this chemical from this process, along with emissions of all other chemicals ASRC emits from its operations, are included in the requested modified cumulative environmental acceptability goal of 100 in a million on roadways and industrial properties.

Has the APCD made a final determination?

No. A final determination will be made following an opportunity for public review and a public hearing. Interested parties will be notified via gov.delivery at the time the APCD makes a final determination. A Response to Comment document will be made available at that time.

What is the APCD taking public comment on?

The APCD is not proposing any amendments to the STAR program regulations. As provided for in the regulations, the APCD is taking public comment on ASRC's requested modification as noticed on March 11, 2017, including the company's proposed best available technology (T-BAT) to reduce emissions and whether the proposed modified goals provide an ample margin of safety to the exposed population. The APCD has re-opened a second public comment period that is currently scheduled to end at 5:00 p.m. on May 12, 2017, and a second public hearing has been scheduled for May 17, 2017, at 6:00 p.m. in the Edison Room, 701 W. Ormsby Ave., Louisville, KY 40203. The APCD will advise the public if it receives a revised request for modification from ASRC.

Additional details about ASRC's request for modification, the public hearing, or making public comments may be found at <https://louisvilleky.gov/government/air-pollution-control-district>.

Louisville Metro Air Pollution Control District STAR FAQs

The Strategic Toxic Air Reduction (STAR) Program regulates the emissions of toxic chemicals from local industry by setting risk goals for those chemicals and the processes in which they are used. It is more stringent than the regulations imposed by the U.S. EPA, which are the de facto limits in communities that do not have a program like STAR. If a company cannot meet the risk goals in STAR, the regulations allow the company to ask for a modification to those goals once it demonstrates that it is using the most effective control technology available and is still operating within an ample margin of safety.



How Does the Strategic Toxic Air Reduction (STAR) Program Work?

The STAR Program provides a regulatory framework for reducing the risk from emissions of toxic air contaminants (TACs) to the public.ⁱ

Step 1 Facilities subject to the STAR Program are required to qualify and quantify their emissions of TACs and develop an emissions inventory. New facilities or existing facilities that modify or expand their operations must qualify and quantify their emissions of TACS in their application to construct.

Step 2 Facilities identify the physical release points, including stacks, vents, and fugitive sources, where TACs are emitted. (This includes physical information about the facility, including metes and bounds data for the property, heights and sizes of buildings, and elevations of equipment and stacks.)

Step 3 Using their emissions inventory from Step 1 and the physical information from Step 2, facilities modelⁱⁱ their emissions of TACs to determine (1) the carcinogenic risk to the public from a 70-year, 365 day, 24-hour exposure to the highest ambient concentration of each TAC the facility could emit and (2) the chronic noncarcinogenic risk to the public from each TAC emitted by the facility.ⁱⁱⁱ The resulting risk is then compared to the following Environmental Acceptability (EA) goals.^{iv,v}

| Process or Process Equipment At a Facility | Applicable TACs | EA Goal Carcinogens | EA Goal Noncarcinogens |
|---|---|----------------------|------------------------|
| Single process or process equipment | Individual TAC | 1.0×10^{-6} | HQ 1.0 |
| All processes and process equipment | Individual TAC | | HQ 1.0 |
| All processes and process equipment | Total of All Applicable TACs (cumulative) | 7.5×10^{-6} | |
| All new or modified processes and process equipment | Total of All Applicable TACs (cumulative) | 3.8×10^{-6} | |

Louisville Metro Air Pollution Control District STAR FAQs

Emissions that impact roadways or other industrial properties may be adjusted by a factor of 10 for carcinogenic risk and 3.0 for noncarcinogenic risk. EA goals are re-evaluated every five years when the facility renews its operating permit or any time a facility constructs new or modifies an existing process.

Step 4 If a facility's emissions do not meet the EA goals, the facility may implement a compliance plan, request a modification of the EA goals up to a risk of 100 in a million following application of the "best available technology for toxics" (T-BAT) and a finding by the District that the modified EA goal provides an ample margin of safety to the exposed population, or the District may impose a Risk Reduction Plan. Opportunities for public participation – public review and comment and public hearings – are required for each of these determinations.^{vi} T-BAT is re-evaluated every five years when the facility renews its operating permit or any time the District determines that revised T-BAT would achieve greater compliance with the EA goal and requires the facility to implement it.

Step 5 When a facility demonstrates that its emissions meet the EA goals or upon District approval of a compliance plan, a request for modification, or a Risk Reduction Plan, the District issues a permit with conditions designed to ensure compliance. Permit requirements include parametric monitoring and, periodic compliance reporting, including annual emissions inventories and annual compliance certifications, which are then compared to the modeled emissions. Facilities are also regularly inspected by the District, and other partners, including U.S. EPA, and OSHA.

ⁱ The list of TACS may be found in APCD Regulation 5.23 *Categories of Toxic Air Contaminants* at https://louisvilleky.gov/sites/default/files/air_pollution_control_district/documents/regulations/5_23v3.pdf; see also the General Duty Clause in APCD Regulation 5.01 *General Provisions*, which applies to any TAC as defined in APCD Regulation 5.00 *Definitions* at

https://louisvilleky.gov/sites/default/files/air_pollution_control_district/documents/regulations/5_00v2.pdf.

ⁱⁱ There are four primary methods for modeling emissions – some simple conservative look up tables and some sophisticated complex air dispersion models – detailed in APCD Regulation 5.22 *Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant* at

https://louisvilleky.gov/sites/default/files/air_pollution_control_district/documents/regulations/5_22v3.pdf.

ⁱⁱⁱ Benchmark ambient concentrations (BACs), are defined as "the concentration of a TAC that is determined pursuant to Regulation 5.20 to meet the environmental acceptability goals of Regulation 5.21. 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 (1x10⁻⁶). 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. A list of the BACs for the STAR Program may be found at

https://louisvilleky.gov/sites/default/files/air_pollution_control_district/documents/allother/2016/bac_list20161010.pdf. The methodology for determining the BAC, including the relevant authorities, may be found in APCD Regulation 5.20 *Methodology for Determining the Benchmark Ambient Concentration of a Toxic Air Contaminant* at

https://louisvilleky.gov/sites/default/files/air_pollution_control_district/documents/regulations/5_20v4.pdf.

^{iv} Acute noncarcinogenic risk may be considered using a shorter averaging time and a methodology consistent with the guidance provided in EPA's *Air Toxics Risk Assessment Reference Library, Volume 1, Technical Resource Manual, Section 12.6 Acute Exposure Reference Values* (April 2004).

^v Methodology for determining compliance with the EA goals may be found in APCD Regulation 5.21 *Environmental Acceptability for Toxic Air Contaminants* at

https://louisvilleky.gov/sites/default/files/air_pollution_control_district/documents/regulations/5_21v6.pdf.

^{vi} Information about T-BAT, compliance plans, requests for modification, and risk reduction plans may be found in APCD Regulation 5.21. "T-BAT" is defined in APCD Regulation 5.00.