Bay Area Air District

Regulation 11, Rule 18

Implementation Procedures

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Regulation 11, Rule 18 Implementation Procedures

1. Introduction

The Air District adopted Regulation 11, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities (Rule 11-18) on November 15, 2017. Rule 11-18 is a health risk-based rule that requires existing facilities to determine their health risk and if that risk exceeds one of the risk action levels, the facility must either (a) reduce health risks below the risk action levels specified in Rule Section 11-18-217 or (b) install best available retrofit controls on all significant sources of health risk.

This document provides additional information about Rule 11-18 and explains how the Air District implements Rule 11-18.

- **Section 1** of this document provides background information about air toxics control in the Air District and explains how Rule 11-18 augments these control programs.
- **Section 2** describes the purpose of this implementation procedures document.
- **Section 3** identifies definitions that apply specifically to Rule 11-18 and defines acronyms that are commonly used in air toxics control programs.
- **Section 4** describes the procedures the Air District intends to use to implement Rule 11-18.
- **Section 5** explains how potential disputes regarding Rule 11-18 requirements for individual facilities will be resolved, and
- **Section 6** discusses how the Air District will keep the public and industry informed about rule implementation progress.

The purpose of this document is to inform the regulated community and interested public on how the Air District implements Rule 11-18. Unlike Rule 11-18 itself, this document does not have the force of law and does not bind the Air District, regulated entities, or any other person or entity. The Air District may follow different procedures from those described here if it determines that use of such procedures is warranted under the circumstances. The Air District will follow all requirements of Rule 11-18, notwithstanding anything in this document.

1.1 Background on Air Toxics Programs

The Air District has been reducing air toxics emissions from stationary sources for more than thirty years. In addition to adopting and implementing regulations targeting specific toxic air contaminants and specific source types, the Air District began evaluating health risks from stationary source facilities and new or modified projects at these facilities in the early 1990's. In 2005, the Air District adopted Regulation 2, Rule 5: Toxic New Source Review to implement the Air District's new source review limitations for stationary sources of toxic air contaminants (TACs). The Air District amended Regulation 2, Rule 5 in 2010 and 2016 to add new toxic air contaminants, revise health effects values, and include updated health risk assessment guidelines. In 2021, the Air District amended Rule 2-5 to add a more stringent cancer risk limit for projects located in communities that are overburdened with air pollution and other health stressors.

Although health risks from ambient air toxic emissions have declined significantly during the last thirty years, some communities in the Air District continue to have elevated and disparate risk levels. Rule 11-18 was adopted in 2017 pursuant to the Air District's authority to regulate and control toxic air contaminant emissions from stationary sources.[1] Rule 11-18 is an important part of the Air District's efforts to protect public health from toxic air pollution and reduce health impacts for disparately impacted communities. Rule 11-18 focuses on reducing health risks from existing facilities that have the highest potential for local health impacts due to stationary source emissions.

To support implementation of Health Risk Assessments (HRAs) used in both Rule 2-5 and Rule 11-18, the Air District has three primary guidance documents to support consistent, transparent, and technically sound application of the rules. These documents include Air Toxics Control Programs Health Risk Assessment Guidelines, the Health Risk Assessment Modeling Protocol, and the Rule 11-18 Implementation Procedures. Each serves a distinct function—covering analytical, technical, and procedural guidelines, respectively. The table below provides an overview of each document and its role in the Rule 11-18 process.

Table 11. Overview of Key Guidance Documents Available

Document	Purpose	Example Contents
Implementation Procedures (this document)	Describes procedures for Rule 11-18 implementation.	• Identifying facilities potentially subject to Rule 11-18 • Rule 11-18 HRA and RRP submission steps and review timelines • Convening a dispute resolution panel • Stakeholder meetings

[1] California Health and Safety Code § 39666.

Document	Purpose	Example Contents
Air Toxics Programs HRA Guidelines[2]	Analytical outline for health risk calculation and evaluation.	• Technical risk calculation methodology • Receptor assumptions • Exposure duration • Interpretation of results • Documentation requirements
HRA Modeling Protocol[3]	Technical instructions for conducting dispersion modeling used in HRAs.	• Technical modeling inputs and setup (e.g., meteorological data, terrain, stack parameters) • Receptor grid spacing • Modeling domain • Output file formats

1.2 Public Engagement

Rule 11-18 supports the Air District's mission to create a healthy breathing environment for every Bay Area resident. The Air District recognizes the public's desire to understand local health impacts due to air pollution in their communities and to be engaged in the process of reducing these health impacts.

To meet these public expectations and in addition to this document, the Air District regularly posts information about Rule 11-18 and implementation progress on two web pages: (1) the Air District's Facility Risk Reduction Program web page (https://www.baaqmd.gov/community-health/facility-risk-reduction-program) and (2) the Rule 11-18 Risk Reduction Facilities web page (https://www.baaqmd.gov/community-health/facility-risk-reduction-program/facility-risk-reduction-list). Please visit these web pages to find current lists of facilities under review and implementation status updates. These web pages are or will be used to:

- Identify procedures and guidelines to be used when preparing toxic inventories, conducting health risk assessments, and reviewing risk reduction plans;
- Inform the public about the status and results of the Air District's toxic inventory review, risk assessment results, and risk reduction requirements for individual sites; and
- Provide opportunities for public review and comment on site-specific risk assessment results and site-specific risk reduction plans.

[2] **HRA Guidelines:** HRAs should be conducted in accordance with the most recently approved version of the BAAQMD Air Toxics Control Programs HRA Guidelines. As of preparation of this document, the most recent version is December 2021 and is available here: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20211215_hraguidelines-pdf.pdf?rev=eb18ff83f96049fa84d54552b58baee3

[3] **HRA Modeling Protocol:** HRA modeling should be conducted in accordance with the most recently approved version of the BAAQMD HRA Modeling Protocol. As of preparation of this document, the most recent version is December 2020 and is available here: https://www.baaqmd.gov/~/media/files/ab617-community-health/facility-risk-reduction/documents/baaqmd_hra_modeling_protocol-pdf.pdf?rev=0d07ca2f01de4c36a3a22f411c8b8f6f

The Air District plans to update these Implementation Procedures when any future amendments to Rule 11-18 are adopted. Invitations to workshops and information about public comment opportunities will be posted to the web site and the Air District will use multiple messaging options to inform the public of these opportunities.

The Air District also plans to have meetings with interested stakeholders to inform the public about the progress of Rule 11-18 implementation, to discuss improvements to the Facility Risk Reduction Program, to learn about community air toxic concerns, and to strategize on ways to improve public health in adversely impacted communities.

2. Purpose

The main purpose of this document is to describe the procedures the Air District intends to follow to implement Regulation 11, Rule 18. These procedures are presented in Section 4 of this document. The following gives a brief overview of other Air District toxic programs and explains how current procedures for these programs are integrated into and used by the Facility Risk Reduction Program.

2.1 Annual Toxic Emissions Inventories

In accordance with the California AB 2588 Air Toxics “Hot Spots” Information and Assessment Act of 1987, most facilities are required to report routine and predictable toxic emissions from stationary sources located at the facility to their local air district on a regular basis. In the Bay Area, the Air District integrates this toxic emission reporting requirement into the annual permit renewal process for the facility. The Air District stores information about each facility, their sources, control equipment, process data, stack data, and emission rates in a computer database. On an annual basis, the Air District requires that facilities report throughput rates, material usage data, and other information to the Air District.

For most facilities, with the exception of the refineries, the Air District uses this “annual update information” in conjunction with stored emission factors to calculate an annual emission inventory for each permitted facility in the Air District. For refineries, annual emissions data are collected in accordance with Regulation 12-15 requirements, which allows for direct emissions reporting from the facility or estimates using a similar procedure as described above for the annual update process. This annual facility inventory includes criteria pollutants, greenhouse gases, and toxic air contaminants. The annual toxic air contaminant emission rates determined through this process constitute the annual toxic emissions inventory for the facility. The Air District reports the toxic emission inventories for all permitted facilities to the California Air Resources Board (CARB) on an annual basis.

2.2 Annual Prioritization Scores

The Air District uses prioritization scores to rank facilities based on health impact potential and to determine when facilities should undergo further review. Prioritization scores[4] represent the relative potential for health impacts from a facility based on the amount of toxic air contaminants (TACs) emitted from a facility, the relative toxicity of the TACs emitted, and the distance from the sources at the facility to people who are exposed to the emissions.

In the Bay Area, the Air District's prioritization scoring process occurs automatically during the annual permit renewal process described above (Section 2.1). After the annual toxic emissions inventory is generated, the Air District applies the prioritization score calculation procedures to produce an annual prioritization score for each facility. As described in Section 4 below, the Facility Risk Reduction Program uses these annual prioritization scores to identify facilities that need further inventory review and to help rank the order in which health risk assessments are conducted for these facilities if risk assessments are required.

2.3 Further Review of Toxic Inventories

If further review is triggered under the Facility Risk Reduction Program, the Air District may re-evaluate the toxic emissions inventory. The Air District reviews the data used to create the annual toxic emissions inventory to ensure that it is based on complete and correct information about the toxic air contaminants that are emitted from the facility. It is the Air District's intention to use the most accurate toxic emissions data available. Section 4 describes the procedures that need to be followed when preparing or updating toxic emission inventories for the Facility Risk Reduction Program.

2.4 Health Risk Assessments

If, after the facility reviews, submits corrections (if necessary), and the Air District reviews and approves the toxic emissions inventory, a facility continues to exceed the prioritization score thresholds described in Section 4, the next type of review considers health risk assessment (HRA) data for the facility. The Air District may use existing HRA information that has been previously prepared and approved for the facility to determine if a new or updated facility-wide HRA may be necessary. This existing HRA information may include past HRAs prepared for "Hot Spots" Program purposes. Section 4 describes the procedures that need to be followed when preparing new or updated HRAs to determine Rule 11-18 risk reduction requirements applicability.

[4] For more information about prioritization scores, see the Air District's Prioritization Score Procedures: https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-11-rule-18/documents/20171003_priorproc_1118-pdf.pdf?rev=14cd7841f4b64710907d28122806c45e

2.5 Risk Reduction Plans

The requirement to submit a risk reduction plan is determined based on the results of an Air District-approved HRA. If an Air District-approved HRA indicates that a facility's health risk meets or exceeds one of Rule Section 11-18-217 risk action levels, Rule Section 11-18-301 requires that the facility submit a proposed risk reduction plan, obtain and maintain Air District approval of a risk reduction plan, and implement the risk reduction measures in accordance with the plan. The risk reduction plan must demonstrate (a) how the facility will reduce health risks below all risk action levels within the required timeframe or (b) that it is not feasible to reduce health risk below the risk action levels and that the facility has installed or will install best available retrofit controls for toxics, or TBARCT,[5] on all significant sources of health risk. Section 4 describes the procedures that need to be followed when submitting, reviewing, and approving risk reduction plans.

3. Definitions

Many terms or phrases that are used in this document are defined in Regulation 11, Rule 18. Please see the Rule for those definitions. Additional terms or phrases used in this document are defined below:

CAPCOA means California Air Pollution Control Officers Association

CARB means California Air Resources Board

High-Priority Facility means any facility that has a prioritization score of 10 or higher. High-priority facilities are potentially subject to Regulation 11, Rule 18 requirements, unless the facility meets one of the exemption criteria in Regulation 11, Rule 18, Sections 103 or 104.

Notified Subject Facility means a facility that has been notified in writing that it is subject to the requirements of Regulation 11, Rule 18.

OEHHA means Office of Environmental Health Hazard Assessment

Potentially Subject Facility means a facility that may be subject to Regulation 11, Rule 18 requirements. The Air District will conduct a detailed review of the toxic air contaminant emissions inventory for this site and may conduct a health risk assessment for this site to assess the applicability of Rule 11-18 requirements.

Prioritization Scores are conservative screening tools used to rank the relative potential for health impacts from different facilities based on the amount of toxic air contaminants (TACs) emitted from a facility, the relative toxicity of the TACs emitted, and the proximity of the facility to possible receptors. The Air District evaluates three categories of health

[5] Rule Section 11-18-204 defines Best Available Retrofit Control Technology for Toxics, or TBARCT.

impacts: cancer risk, chronic non-cancer impacts, and acute non-cancer impacts. Two prioritization scores are calculated each year based on annual toxic emissions: a cancer risk prioritization score and a chronic non-cancer score. The prioritization score for a site is the maximum of either the cancer risk prioritization score or the chronic non-cancer prioritization score.

PAF means Proximity Adjustment Factor. A PAF is a multiplication factor that is used in the calculation of a prioritization score for a site. PAFs represent the potential reduction in ground level concentration of a toxic air contaminant that may occur at increasing distances from the site emitting the toxic air contaminant. Proximity adjustment factors are determined in accordance with CAPCOA procedures based on the distance from the site to the nearest residence or off-site worker.

REL means Reference Exposure Level

Unadjusted Prioritization Scores means a prioritization score that uses a PAF equal to 1.

4. Procedures

This section describes the procedures the Air District follows to implement Rule 11-18. There are typically four major steps to implementing this rule:

1. Identifying and notifying facilities that are potentially subject to Rule 11-18 requirements based on prioritization score.
2. Updating toxic inventories and assessing health risks from toxic emissions through a facility-wide Health Risk Assessment (HRA).
3. Determination if the HRA results indicate that the facility meets or exceeds any of the RALs in Rule 11-18.
4. Implementing approved Risk Reduction Plans (RRPs) for facilities subject to Rule 11-18.

The first step is to determine which facilities may fall under Rule 11-18 based on prioritization score, which is calculated using an Air District-approved toxic emissions inventory. After the facilities potentially subject to Rule 11-18 requirements are identified, the Air District may notify them of their obligation to prepare an HRA and, if an HRA is required, the Air District will provide a copy of the Air District-approved emissions inventory and toxic emissions release data.

In the second step, the HRA results are provided by the facility. The Air District will review and correct, if needed, the HRA results and toxic emissions inventory before approving the HRA results. The adoption of Rule 11-18 and other recent state legislation (AB 197 and AB 617) have resulted in a renewed emphasis on improving the Air District's toxic emissions inventory data. Many facilities have requested to review and update their toxic emissions inventory data and other facility information that would be used for Air District decisions during these first two steps. The Air District concurs that a current and accurate

toxic emissions inventory is a key consideration for this process. Therefore, inventory and facility data improvements have been incorporated into the procedures (Section 4.1.4).

In the third step, the results from the HRA will be compared against the risk action levels to determine whether the facility will be required to submit an RRP. In this step, facilities that exceed any risk action levels are required to develop and submit an RRP for the Air District's review and approval.

Step 4 involves the implementation of the approved RRP, which includes meeting the applicable risk reduction requirements of Rule 11-18 within the specified timeline. This step includes the development, submittal, review, and approval of risk reduction plans.

Procedures and criteria for the typical implementation steps are listed below.

4.1 Identify Potentially Subject Facilities

With minor exceptions, Rule 11-18 applies to any facility that is required to report a toxic air contaminant (TAC) emissions inventory to the Air District pursuant to the Air Toxic "Hot Spots" Information and Assessment Act of 1987, California Health and Safety Code, Section 44300 *et seq*. The Air District generally follows CARB's emission inventory, prioritization score, and health risk assessment procedures that were developed for the "Hot Spots" Program when determining Rule 11-18 applicability. Any deviations from these CARB procedures or clarifications to these CARB procedures are explained in Air District guidance documents or the procedures below.

4.1.1 Rule 11-18 Toxic Emissions Inventories

For the purposes of Rule 11-18, toxic air contaminant emission inventories must be prepared in accordance with the California Air Resources Board's Emission Inventory Criteria and Guidelines (EICG) for the "Hot Spots" Program. The EICG, last amended August 18, 2021,[6] describes the types of facilities that must provide toxic emission inventories to the Air District and what must be included in that inventory. The EICG requires that facilities report routine and predictable toxic emissions from stationary sources at a facility. Emissions from emergency operations are excluded from "Hot Spots" reporting requirements and from Rule 11-18 toxic emissions inventories. Tailpipe emissions from motor vehicles are also excluded from "Hot Spots" Program reporting requirements and Rule 11-18 toxic emissions inventories.

"Hot Spots" Program toxic emissions reporting requirements apply to the full list of compounds identified in Appendix A of the EICG.[7] Since Rule 11-18 applicability depends on health risk thresholds, the Air District is only requiring that Rule 11-18 toxic

[6] California Air Resources Board's Emissions Inventory Criteria and Guidelines for the Air Toxic "Hot Spots" Program is available online here: https://ww2.arb.ca.gov/sites/default/files/2022-10/EICG%20Report.pdf

[7] Appendix A of the EICG is available here: https://ww2.arb.ca.gov/sites/default/files/2022-10/Appendix%20A.pdf

emissions inventories include compounds that have health risk values listed in Table 2-5-1 of Regulation 2, Rule 5.[8] This is in accordance with the definition of a Toxic Air Contaminant in Rule Section 11-18-225. OEHHA routinely updates the health effects values for toxic compounds that are required to be used for the "Hot Spots" Program. Although the Air District periodically updates Table 2-5-1 of Regulation 2, Rule 5 to include any new toxic compounds or updated health effects values approved by OEHHA, there will be a lag between OEHHA approval of a new health effect value and Air District adoption of that new health effects value. Thus, Table 2-5-1 may not include all of the compounds with OEHHA-approved health effects values.

The Air District updates the toxic emissions inventory for a facility on an annual basis, and this is consistent with the reporting requirements under EICG/CARB Criteria Pollutant and Toxics Emissions Reporting (CTR) guidelines.[9]

The toxic emissions inventory is generally based on throughput rates, which are updated on an annual basis; toxic air contaminant emission factors, which are updated on an as-needed basis; and emission calculation algorithms specific to each source type.[10] Fugitive equipment sources may also contribute significantly to facility risk but are not directly tied to throughput rates. Emissions from these sources are estimated using protocols appropriate to the source type and incorporated into the inventory to ensure that the HRA reflects all relevant risk drivers. The necessary data for each source are collected and entered into the Air District's database during the permit application process. Toxic emission factors are determined in accordance with the Air District's Toxic Air Contaminant Emission Factor Guidelines and the EICG.

For example, a boiler burning natural gas would have a set of toxic emission factors that would include the pounds of formaldehyde generated per thousand cubic feet of natural gas burned in the boiler. The facility reports the amount of natural gas (in thousand cubic feet) burned in the boiler each year. The Air District's computer system multiplies the formaldehyde emission factor by the annual reported throughput rate to calculate the amount of formaldehyde generated at that boiler during the inventory year. Sources equipped with emission control devices would also have abatement factors that are incorporated into this calculation procedure.

For Rule 11-18 purposes, the toxic emissions inventory must include the best estimate of actual annual TAC emissions (pounds per year) and not the maximum permitted or maximum potential annual emissions rate for each source, abatement device, or emission point. For hourly emissions, the Rule 11-18 toxic emissions inventory must include the best estimate of the maximum hourly emission rate (pounds per hour) for each TAC.

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[8] Regulation 2, Rule 5 and Table 2-5-1 are available here: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20211215_rg0205-pdf.pdf?rev=ddf72e12b699400e953b9b8dc24d2c34

[9] https://ww2.arb.ca.gov/our-work/programs/criteria-and-toxics-reporting

[10] Petroleum refineries and support facilities must report emissions including emissions of toxic air contaminants pursuant to the requirements and procedures in Regulation 12, Rule 15.

The toxic emissions inventory that is used for a facility-wide health risk assessment is based on a single, representative emissions inventory year and it will usually, but not always, be based on the most recently available inventory year. For example, as of December 2023, emissions data reported for calendar year 2022 are the most recent available inventory year for many facilities. The Rule 11-18 toxic inventory would include 2022 inventory data for all sources at the facility and not 2021 data for some sources and 2022 data for other sources, unless – due to the transition to annual reporting described above – a single inventory year of data is not available for all sources at a facility. In the latter case, emissions updated for a previous year must be considered to be part of the current inventory year for Rule 11-18.

When determining if an inventory year is representative of normal operations, the Air District will consider reported throughput data and other recent or planned changes to the facility that could have a major impact on future toxic emissions, such as new source or control equipment installations, source shutdowns, or material changes. For example, year 2020 is likely not a representative inventory year for many facilities due to very low throughput rates reported by many facilities during the COVID pandemic.

4.1.2 Prioritization Scores

Prioritization scores represent the relative potential for health impacts from a facility. The Air District uses prioritization scores to rank facilities based on health impact potential and to determine when facilities should undergo further review. As described in Section 2, the facility's annual prioritization score is calculated during annual permit renewal. During review and update of the toxic emissions inventory that will be used for a Rule 11-18 applicability determination, the Air District may need to review and revise toxic emissions or proximity adjustment factors and recalculate the prioritization score for a facility. Any recalculation of the prioritization score for a facility shall follow the Air District's Prioritization Score Procedures.[11]

As explained in the Air District's Prioritization Score Procedures, the three criteria used to calculate prioritization scores are: 1) annual toxic emissions, 2) health effects values for toxic compounds, and 3) proximity adjustment factors. Proximity adjustment factors are intended to account for reductions in health impact potential that normally occur when the distance between a facility and a receptor increases. Most facilities in the Bay Area have a proximity adjustment factor of 1, which means that no reduction in health impact potential is being applied, because most facilities have receptors located less than 100 meters (328 feet) from the facility. Table 2 of the Air District's Prioritization Score Procedures identifies the proximity adjustment factors that may be applied when receptors (residents or off-site workers) are located at least 100 meters away from a facility.

[11] The Air District's Prioritization Score Procedures for ATHS Program and Rule 11-18 can be found online here: https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-11-rule-18/documents/20171003_priorproc_1118-pdf.pdf?rev=14cd7841f4b64710907d28122806c45e&sc_lang=en

As discussed in the Air District's Prioritization Score Procedures, there are two types of prioritization scores: a cancer risk-based prioritization score and a non-cancer-based prioritization score. For Rule 11-18 reviews, the Air District considers these two prioritization scores. The facility prioritization score is the higher of these two scores.

Requests to Reconsider Prioritization Scores:
A facility owner/operator may request that the prioritization score be reevaluated using a revised toxic emissions inventory, as described in Rule Section 11-18-404. In the reevaluation request, the facility must provide:

1. The recalculated prioritization score,
2. A revised emissions inventory, and
3. Documentation of the changes to the emissions inventory.

Detailed instructions on how to calculate the prioritization scores can be found in the Prioritization Score Procedures hosted on the Air District's Facility Risk Reduction Webpage. The documentation of the emissions inventory changes must include at a minimum:

1. All proposed changes with clear references to the original data,
2. A description of the nature of each proposed change (e.g. correction, addition, deletion), and
3. The justification or basis for each proposed change.

Based on the recalculated prioritization score, the Air District may send the facility a notification withdrawing the requirement that the facility prepare an HRA. However, unless the Air District withdraws the requirement that the facility prepare an HRA, the deadlines for submission of a draft site-specific modeling protocol in accordance with Rule Section 11-18-402.2 and preliminary HRA report in accordance with Rule Section 11-18-402.3 are not altered by submission of a request for reconsideration of the prioritization score. In other words, facilities must continue to make submissions on the timelines outlined in Rule Section 11-18-402, even while a request for reconsideration of the prioritization score is pending.

4.1.3 Prioritization Score Thresholds

In accordance with CARB guidance for the Hot Spots Program, any facility with a prioritization score of 10 or higher (PS≥10) is considered a high-priority facility and should undergo further review for health risks. Any facility with a prioritization score of less than 1 (PS<1) is considered a low-priority facility that is unlikely to result in significant health impacts and requires no further review. Any facility with a prioritization score between 1 and 10 (PS≥1 but PS<10) is an intermediate-priority facility that may potentially warrant further review.

For Rule 11-18, the Air District generally follows this "Hot Spots" Program guidance when determining if further review, such as a facility-wide health risk assessment (HRA), is necessary. Under Rule 11-18, high-priority sites (PS>10) are required to have an updated

facility-wide HRA. Sites with only emergency-use stationary diesel-fired engines (EDE Only Sites) and sites with only retail gasoline dispensing facilities (GDF Only Sites) are potentially exempt from Rule 11-18 per Rule Sections 11-18-103 and 11-18-104. However, these exemptions do not apply if the facility prioritization score is 250 or higher. An HRA is required for intermediate-priority facilities if the non-cancer prioritization score is greater than 1. Low-priority facilities are not subject to Rule 11-18 HRA requirements.

Due to the large number of facilities that meet the thresholds above for further review, the Air District split the inventory update and health risk assessment review for these facilities into several phases. Phase I includes sites with the highest potential for health risks. Phase II sites have a lower potential for elevated health risks but are still considered high-priority facilities.

Prioritization score thresholds and associated actions for sites that are potentially subject to Rule 11-18 HRA requirements are summarized in Table 2 below.

Table 22. *Prioritization Score Thresholds for Rule 11-18 Applicability Determinations*

Site Type	Cancer Risk Prioritization Score		Non-Cancer Prioritization Score	Review Phase	Next Steps
All Site Types	≥ 250	OR	≥ 10	Phase I	Facility-Wide HRA Required, Compare Results to: 11-18-217 Risk Action Levels
All Site Types, Except EDE Only or GDF Only	≥ 10 and < 250	OR	≥ 1 and < 10	Phase II	Facility-Wide HRA Required, Compare Results to: 11-18-217 Risk Action Levels
EDE Only (Meets 11-18-103)	< 250	AND	< 10	NA	Not Subject to Rule 11-18 HRA Requirements
GDF Only (Meets 11-18-104)	< 250	AND	< 10	NA	Not Subject to Rule 11-18 HRA Requirements
All Site Types	< 10	AND	< 1	NA	Not Subject to Rule 11-18 HRA Requirements

During development of Rule 11-18, the Air District evaluated prioritization scores for all sites and developed lists of potentially subject facilities. The Air District re-evaluated prioritization scores for all facilities in 2018, 2020, 2023, and 2024 and developed updated lists of potentially subject facilities that will need to undergo the next steps in this review process. Current facility lists are posted here: https://www.baaqmd.gov/community-

health/facility-risk-reduction-program/facility-risk-reduction-list. The Air District annually reviews prioritization scores for all facilities to ensure that any new sites or changes to existing sites are included and that facilities are categorized into the appropriate review phase.

4.1.4 Toxic Emissions Inventory and Toxic Emissions Release Data Review and Correction Process

This section describes the emissions inventory review and correction process that occurs during the Rule 11-18 implementation process.

The Air District intends to use the toxic emissions inventory and toxic emission release data that is best available and most representative of routine operations to determine the applicability of Rule 11-18 requirements. The Air District's toxic emission factors and toxic emissions release data, which include, but are not limited to, source-specific information such as source location and stack parameters, were initially entered when a source was first permitted and may have undergone limited updates since that time and these emission factors may therefore be outdated. To ensure that the toxic emissions inventory is accurate, the Air District provides facilities with an opportunity to review and update their toxic emission factors based on source test data or other on-site measurements, updated pooled source test data, new CARB or AP-42 emission factors or other available literature when the facility submits the preliminary HRA report and toxic emissions inventory utilized for the HRA model. The facilities are also given the opportunity to correct and/or provide any missing source-specific data at this time. The Air District also reviews emissions factors and source-specific data, and updates data where appropriate.

The Air District has developed toxic emissions calculation guidance for specific types of sources that will improve the Air District's toxic emissions inventories for many source categories.[12]

In addition to annual emissions, health risk assessments will require maximum one-hour toxic emissions data. The Air District does not currently maintain short term toxic emissions data. Therefore, the Air District intends to estimate maximum hourly emissions for each source based on the Air District's best judgement. The maximum one-hour emissions data may be used to estimate health risks from any toxic air contaminants that have acute reference exposure levels. Some of the common TACs that have acute RELs are: ammonia, benzene, 1,3 butadiene, chloroform, formaldehyde, hydrochloric acid, hydrogen sulfide, isopropyl alcohol, mercury compounds, methanol, methyl ethyl ketone, methylene chloride, nickel compounds, nitric acid, perchloroethylene, sulfuric acid, toluene, vinyl chloride, and xylene. See Table 2-5-1 in Regulation 2, Rule 5 for a complete list of TACs with acute RELs.

[12] The Air District's Toxic Air Contaminant Emission Factor Guidelines can be found online here: https://www.baaqmd.gov/~/media/files/ab617-community-health/facility-risk-reduction/documents/tac_emission_factor_guidance_august_2020-pdf.pdf?rev=1917e6634bb34bbfa28a0644119384c0

The Air District notifies facilities in writing that an HRA is required in accordance with Rule Section 11-18-401 or 11-18-402. This notification initiates the HRA procedures outlined in Section 4.2.2. The notification will include the most recent toxic emissions inventory data, which will include both annual emissions and maximum one-hour toxic emissions data, toxic emissions release data for the site plus information about the facility, source emission rates, and emission point data and a modeling protocol template. Facilities may also request additional information from the Air District—such as emission factors, abatement factors, and the basis for the current toxic emissions data—if needed to support the site's review process.

- For facilities subject to Rule Section 11-18-401 (legacy HRA procedures), facilities are asked to review these data and submit corrected information, if necessary, within 60 days.
- For facilities subject to Rule Section 11-18-402 (current HRA procedures), any necessary corrections to information are submitted with the preliminary HRA, which is due to the Air District within 90 days of receiving the final site-specific modeling protocol, pursuant to Rule Section 11-18-402.2.3.

During the Air District review of toxic emissions inventory data, if the Air District does not agree with a proposed emission factor or toxic emissions inventory rate, the Air District will notify the site. However, the Air District may move forward with the Air District authorized emission factors, without reaching an agreement on emission factors, to the preliminary health risk assessment step.

For facilities subject to Rule Section 11-18-402 that would like to request reconsideration of the determination that an HRA is required using a revised toxic emissions inventory in accordance with Rule Section 11-18-404, please see section 4.1.2 Prioritization Scores.

For facilities that would like to request the Air District to consider additional testing or studies before finalizing the emissions data for specific sources, a request may be submitted to conduct additional testing or perform studies in accordance with Rule Section 11-18-405. This provision allows the facility to submit site-specific emissions data and provides the Air District an opportunity to consider all available data to ensure that the data used for the HRA represent the best available toxic emissions information.

4.2 Assessing Health Impacts

Rule 11-18 is a health risk-based rule. As described in Rule Sections 11-18-401 and 11-18-402, a facility becomes subject to the risk reduction requirements in Rule 11-18 after the Air District notifies the site that an APCO-approved Health Risk Assessment (HRA) results in a facility health risk of equal to or greater than a risk action level listed in Rule Section 11-18-217. Thus, the Air District will usually determine which facilities are required to undergo HRA review and then review these HRAs to assess the applicability of RRP requirements.

The Air District may inform a facility based on the facility's Air District-approved toxic emissions inventory and the resulting prioritization score if there are any changes to the Rule 11-18 status of the facility. Rule Section 11-18-402 requires facilities to submit a site-specific modeling protocol within 45 days of the notification by the Air District to prepare an HRA, and requires the facility to provide a preliminary HRA result within 90 days of receiving the final site-specific modeling protocol pursuant to Rule Section 11-18-402.2.3.

Rule Section 11-18-402.3 requires facilities to provide any additional information needed for reproducing the results of the HRA with the submission of the preliminary HRA result. This includes but is not limited to:

- Modeling files, so the HRA can be rerun if necessary,
- Annual and hourly source-specific toxic emissions inventory data,
- Source and stack locations,
- Stack parameter data,
- Building parameter data,
- Meteorological data,
- Terrain data,
- Receptor locations, and
- Documentation of changes to the toxic emissions inventory data.[13]

The Air District plans to initiate the toxic inventory and HRA review processes for groups of facilities in small, manageable batches. The Air District has initiated this review for the first batch of facilities: Phase 1 sites with cancer risk prioritization scores (cancer PS) of 250 or higher or non-cancer prioritization scores (non-cancer PS) of 10 or higher. After the review of Phase I facilities is complete, the Air District will initiate the review of the remaining facilities in the following order: Phase II facilities with cancer PS of 100 or higher, Phase II facilities with cancer PS of 50 or higher, Phase II facilities with cancer PS of 25 or higher, Phase II facilities with cancer PS of 10 or higher, and finally Phase II facilities with non-cancer PS greater than one.

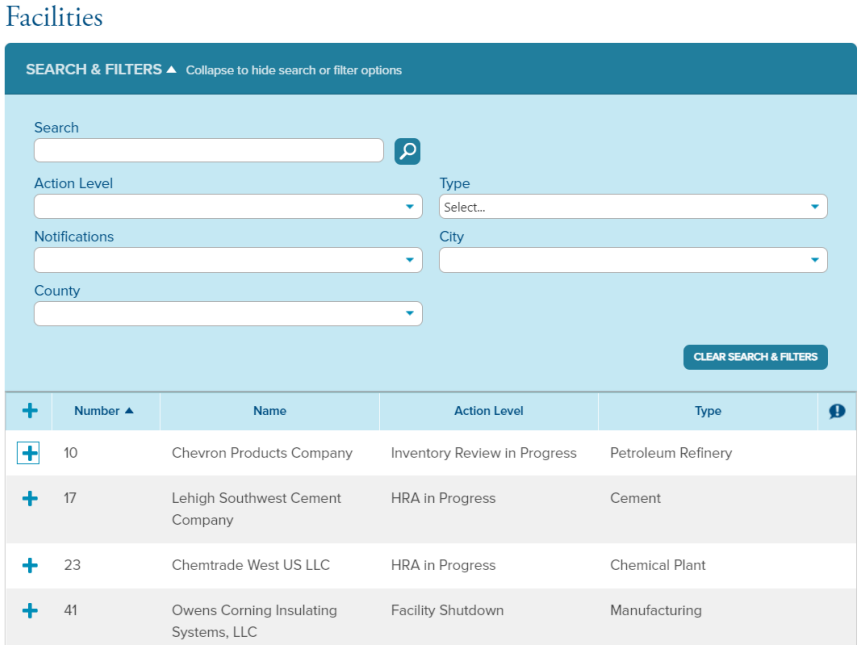
Although the Air District generally plans to review facilities in the batches described above, the Air District may prioritize review of toxic inventories and HRAs for Rule 11-18 facilities that are located in Overburdened Communities as defined in Regulation 2: Permits, Rule 1: General Requirements, Section 2-1-243 and the communities selected by the California Air Resources Board for additional resources under Assembly Bill 617 (AB 617) pursuant to Health and Safety Code sections 42705.5(c)-(d) or 44391.2(c). The Air District may also elevate a facility located within an Overburdened Community or AB 617 Community from a future review batch to the current review batch.

The status of the Air District's inventory and HRA review process can be found on the Air District web site by searching the action level in the facility tables located at:

[13] The documentation of the emissions inventory changes should include, but is not limited to: all proposed changes with clear references to the original data, a description of the nature of each proposed change (e.g. correction, addition, deletion), and the justification or basis for each proposed change.

https://www.baaqmd.gov/community-health/facility-risk-reduction-program/facility-risk-reduction-list

Lists of facilities that are categorized into each phase will also be posted on this page and updated annually. The searchable Facilities table shown below currently includes Phase I facilities. The Air District will add the next batch of facilities to this table upon Air District initiation of review for that batch.



4.2.1 Guidelines for Health Risk Assessments

HRAs that will be used to determine applicability of Rule 11-18 risk reduction requirements will be conducted in accordance with the Air District's HRA Guidelines, which are published on the Air District's web site at: https://www.baaqmd.gov/community-health/facility-risk-reduction-program.[14]

4.2.2 Modeling Protocol for Health Risk Assessments

The Air District has prepared a general HRA modeling protocol that describes how sources should be modeled and how health impacts should be calculated. It is available

[14] HRAs should be conducted in accordance with the most recently approved version of the BAAQMD Air Toxics Control Programs HRA Guidelines. As of preparation of this document, the most recent version is December 2021 and is available here: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20211215_hraguidelines-pdf.pdf?rev=eb18ff83f96049fa84d54552b58baee3

on the Air District web site at: https://www.baaqmd.gov/community-health/facility-risk-reduction-program.[15]

4.2.3 Procedures for Implementing Health Risk Assessments

Legacy Procedures (Rule Section 11-18-401)

1. The Air District develops an initial emissions inventory and provides it to the facility for review.
2. The facility reviews and responds with comments within 60-120 days.
3. The Air District reviews the facility's comments and may adopt proposed alterations as appropriate. The Air District prepares a site-specific protocol and performs the preliminary HRA.
4. The Air District publishes the preliminary HRA and notifies the public and facility that the preliminary HRA is open for comment for 90 days.
5. The Air District reviews comments and may adopt proposed alterations as appropriate. The Air District finalizes and publishes the final HRA report.

Current Procedures (Rule Section 11-18-402)
The Air District requires facilities receiving notifications pursuant to Rule Section 11-18-402.1 to submit HRA results to the Air District. The Air District authorizes the use of a contractor to conduct an HRA.

Although the Air District requires facilities to submit HRA results, it may, under certain circumstances, use an HRA prepared by the Air District pursuant to Rule Section 11-18-402.6. For example, the Air District anticipates it may prepare HRAs for certain small facilities that lack the internal resources to prepare an HRA.

Rule 11-18 requires the facility, the contractor (if used), and the Air District to follow the procedures below.

1. The Air District provides the facility with the notification to prepare an HRA in accordance with Rule Section 11-18-402.1, along with an Air District-approved toxic emissions inventory and toxic emissions release data for the facility and a modeling protocol template.
2. The facility notifies the Air District if the facility plans to use a contractor for the HRA.
3. Within 30 days of receiving a notification to prepare an HRA, a facility may recalculate the facility's prioritization score using a revised toxic emissions

[15] HRA modeling should be conducted in accordance with the most recently approved version of the BAAQMD HRA Modeling Protocol. As of preparation of this document, the most recent version is December 2020 and is available here: https://www.baaqmd.gov/~/media/files/ab617-community-health/facility-risk-reduction/documents/baaqmd_hra_modeling_protocol-pdf.pdf?rev=0d07ca2f01de4c36a3a22f411c8b8f6f

inventory pursuant to Rule Section 11-18-404 and request reconsideration from the Air District of whether an HRA is required. Based on the recalculated prioritization score, the Air District may send the facility a notification withdrawing the requirement that the facility prepare an HRA. The Air District will review a proposed recalculation of a facility's prioritization score only if the recalculation would result in the facility being in a different review phase as described in Table 2.

4. The Air District submits an invoice to the facility for the HRA fees required pursuant to Regulation 3, Section 3-342.
5. The facility submits a draft modeling protocol that follows the modeling protocol template approved by the Air District within 45 days of the notification by the Air District to prepare an HRA in accordance with Rule Section 11-18-402.2.
6. The Air District reviews the draft modeling protocol. If any revisions to the draft modeling protocol are necessary, the Air District provides a list of necessary revisions to the facility. The facility must implement all revisions and resubmit the protocol within 14 days of receiving the revisions from the Air District in accordance with Rule Section 11-18-402.2.2. After the Air District determines the modeling protocol meets Air District Modeling Protocol and HRA Guidelines and is otherwise adequate, the Air District will approve the modeling protocol. If issues remain in the revised protocol, the Air District may reject it and require the facility to use the Air District's standard protocol template with default parameters, or to make any other revisions deemed necessary by the Air District, and charge additional review fees per Regulation 3, Section 3-342. The Air District has the authority to require the facility to modify the modeling protocol or approve a protocol that is developed or modified by the Air District.
7. The facility or the contractor conducts a preliminary HRA.
8. The facility submits to the Air District a report of (1) the draft preliminary HRA results that follows the HRA report template approved by the Air District and (2) all supporting materials within 90 days of the approval of the HRA modeling protocol by the Air District in accordance with Rule Section 11-18-402.3. The draft preliminary HRA report includes the toxic emissions inventory, documentation of any changes to the emissions inventory data, toxic emissions release data, and any other assumptions and information required to reproduce the HRA results.
    a. The documentation of the emissions inventory changes should include, but is not limited to:
        i. all proposed changes with clear references to the original data,
        ii. a description of the nature of each proposed change (e.g. correction, addition, deletion), and
        iii. the justification or basis for each proposed change.
    b. In its submission, the facility may request that the Air District allow the facility to conduct additional tests or studies in the future that might result in different emission data and/or emission factors for a specific source (Rule

Section 11-18-405). The Air District may authorize the facility to conduct such testing and/or studies to obtain updated emission data or emission factors.

The facility shall make this request by including a table in the draft preliminary HRA report that identifies the approved sources, the currently Air District-approved emissions and emission factors for each source, and details regarding the tests and/or studies to be conducted. If the Air District approves the facility's request, the Air District shall continue with all the below-noted steps based on the currently approved emissions and emission factors, but the Air District will leave open the possibility of altering the HRA should the subsequent testing and/or studies demonstrate that different emissions inputs are appropriate. All updated emission data and/or emission factors must be submitted for review and approval to the Air District prior to the release of the draft Risk Reduction Plan for public comment. The Air District may rescind approval of the final HRA or otherwise alter the HRA as warranted by the data.

9. The Air District reviews the draft preliminary HRA report submitted by the facility. If any revisions to the draft preliminary HRA report are necessary, the Air District will provide a list of necessary revisions to the facility. The facility must implement all revisions and resubmit the HRA report within 14 days of receiving the revisions from the Air District in accordance with Rule Section 11-18-402.3.2. If, after one round of alterations, the APCO determines additional alterations are needed, the APCO may notify the facility of an additional round of alterations to the HRA report, which the facility must implement within 14 days of receiving the notification, and the APCO may charge additional review fees per Section 3-342.

   The Air District has the authority to require the facility to modify the draft preliminary HRA, including, but not limited to, changing the toxic emissions inventory and toxic emissions release data. The Air District also may take over finalization of the preliminary HRA itself. Once the draft preliminary HRA meets all applicable requirements and is otherwise adequate, the Air District will approve the preliminary HRA report.

10. The Air District holds a 90-day review and comment process on the preliminary HRA pursuant to Rule Section 11-18-402.4.

11. The Air District considers all comments on the preliminary HRA.

    If further revisions to the preliminary HRA are determined to be necessary by the Air District after public comments, the Air District will provide a list of necessary revisions to the facility. The facility must implement all revisions and resubmit a draft final HRA report within 14 days of receiving the revisions from the Air District in accordance with Rule Section 11-18-402, and the APCO may charge additional review fees per Rule Section 3-342. The facility may request additional time to address all APCO comments and suggestions (up to an additional 30 days) provided that the facility owner/operator can demonstrate that additional time is necessary.

The Air District has the authority to require the facility to modify the draft final HRA, including, but not limited to, by changing the toxic emissions inventory and toxic emissions release data. The Air District also may take over finalization of the draft final HRA itself. Once all applicable requirements are met and the Air District otherwise determines the HRA report is adequate, the Air District may approve the final HRA report.

12. The Air District notifies the facility in writing of these final HRA results and their obligations under Rule 11-18, such as submittal of a draft risk reduction plan and the due date. The Air District publishes the final Air District-approved final HRA on the web site along with a document containing responses to comments received during the comment period and identifies the facility's risk reduction plan requirements, if any.
13. The Air District frequently updates the web site to include posts of preliminary HRAs for comment and final HRA results that trigger risk reduction requirements.

4.3 Implementing Risk Reduction Plan Requirements

In accordance with Rule Sections 11-18-401.3 and 402.5, the Air District will notify the facility, in writing, if the Air District-approved final HRA results meet or exceed a Rule 11-18 risk action level. As defined in Rule Section 11-18-217, the risk action levels are: a cancer risk of 10 per million, a chronic hazard index of 1, and an acute hazard index of 1. In accordance with Rule Section 11-18-403, this notification will trigger the requirement for a facility to submit a draft Risk Reduction Plan. Facilities and the Air District shall follow the procedures below for submittal, review, and approval of risk reduction plans:

1. Any facility that receives a notification per Rule Sections 11-18-401.3 and 402.5 shall prepare a draft risk reduction plan that meets the requirements of Rule Section 11-18-403.2.
2. The draft risk reduction plan shall be submitted within 180 days of notification that a draft plan is required.
3. Upon receipt of a draft risk reduction plan, the Air District will send an invoice for the Regulation 3, Section 3-341 Fee for Risk Reduction Plan review.
4. The Air District will follow the Rule Section 11-18-403.3 procedures to review and approve draft Plans.
5. Draft Risk Reduction Plans (excluding confidential information) will be posted on the Air District web site for at least 45 days.
6. The Air District considers all comments and prepares a response to comments on the draft RRP. The response to comments will be released with the ultimate decision to approve or disapprove the draft Risk Reduction Plan.

7. If the APCO finds that the draft RRP meets the requirements of Rule Section 11-18-403.2, the Air District will approve the draft RRP pursuant to Rule Section 11-18-403.5.1 and provide written notification to the facility.

   If the APCO determines after the public comment period that the draft Plan does not meet the requirements of Rule Section 11-18-403.2, the APCO will notify the facility owner/operator in writing and will specify the basis for this determination. Upon receipt of such notification, the facility owner/operator shall correct the identified deficiencies and resubmit the draft Plan within 45 days.

   If the APCO determines that the facility owner/operator failed to correct any deficiency identified in the notification or that the Plan otherwise fails to comply with Rule Section 11-18-403.2, the APCO will disapprove the draft Plan.

8. The Air District will post the approved final RRP on the web site.
9. The facility shall demonstrate compliance by implementing the RRP in accordance with the time frames in the RRP pursuant to Rule Section 11-18-403.2.5 and by submitting Rule Section 11-18-501 Progress Reports on an annual basis.
10. The Air District will maintain a list of sites that are subject to the Rule 11-18 risk reduction plan requirements on the web site and will identify plan review dates, approval dates, and implementation deadlines.

5. Dispute Resolution Panel

Consistent with the 2017 Air District Board Resolution originally adopting Rule 11-18 and a 2019 settlement agreement with Western States Petroleum Association, the Air District intends to convene a panel of technical experts (Dispute Resolution Panel or DRP) to advise the APCO regarding technical disputes that may arise between industry and the Air District regarding implementation of Rule 11-18 at refineries. Refineries may request review of a disputed matter by the DRP after the Air District has considered and responded to comments on preliminary HRAs or draft risk reduction plans.

The DRP will consist of at least three independent experts[16] in the fields of toxic air contaminant inventories, health risk assessment, or air pollution control. The DRP may select a chair for each dispute brought before the panel. The panel may choose to rotate the chair for the different cases brought before the panel.

Below is the timeline for the DRP:

1. Within 15 days of receiving Air District responses to comments on a preliminary HRA or draft risk reduction plan, the refinery that is the subject of the HRA or draft risk reduction plan may notify the assigned Air District contact in writing that they would like to convene the DRP and identify the issues regarding which they are requesting DRP review.

[16] The DRP independent experts will not include current Air District staff but may include retired Air District staff, staff from other air quality agencies, or other persons with acknowledged expertise relevant to the issue in dispute.

2. The Air District notifies panelists of the case and technical issues and chooses three panel members from those who are available to review the case. The panel may select a Chair, if necessary.
3. The Air District provides the DRP with facility comments regarding the technical dispute and Air District responses to comments.
4. The DRP reviews the case and poses any clarifying questions within 15 days of receiving the case information.
5. Each party responds in writing to questions from the DRP within 7 days.
6. The DRP considers the case and makes its recommendation in writing to the APCO and the other party within 15 days of receipt of the responses to their questions.
7. The ultimate decision maker regarding any matter on which the DRP provides a recommendation is the APCO.

Submissions to the DRP are subject to the following requirements and procedures:

1. The request for convening of the DRP for disputes involving HRAs or RRPs will be limited to facilities that are defined as refineries pursuant to Regulation 8: Organic Compounds, Rule 1: General Provisions, Section 8-1-211.
2. Each DRP request must identify specific disagreements with an Air District determination and must provide specific recommended changes or remedies to resolve the disputed matter. Each DRP request must include documents or materials to support the recommended changes or remedy.
3. Each DRP requestor may only raise an issue, propose a recommended change or remedy, or rely on documents or materials if:
   (1) the requestor raised the specific issue, proposed the specific recommended change or remedy, and relied on the specific documents or materials in a comment submitted during the comment period for the preliminary HRA pursuant to Rule Section 11-18-402.4 or the comment period for the draft risk reduction plan pursuant to Rule Section 11-18-403.4; or
   (2) the issue involves a dispute regarding a change to a preliminary HRA or draft RRP made after the comment period pursuant to Rule Section 11-18-402.4 or 11-18-403.4, in which case the DRP requestor may submit additional documents and materials, which the Air District shall accept as a valid part of the DRP request if they are relevant to the question at issue and are not unduly burdensome.
4. After the Air District responds to comments on preliminary HRAs, the types of matters that can be raised are limited to the inventory and the methodology used for the HRA.
5. After the Air District responds to comments on draft risk reduction plans, the types of matters that can be raised are limited to the technical feasibility or economic burden involved in a demonstration pursuant to Rule Sections 11-18-403.2.6.1 and 11-18-403.2.6.3, determination of TBARCT, and any updates to the inventory that have been made pursuant to Rule Section 11-18-405.
6. A facility is limited to one request to convene a DRP for the HRA and one request for the Risk Reduction Plan. Each request will be limited to a total of three issues,

where each issue consists of an individual specific disagreement and a specific recommended change or remedy.

7. If the Air District finds that a request actually covers multiple issues or is overly burdensome, the Air District may rephrase or reframe the question to an appropriate scope for the DRP.
8. The Air District may reject an issue in the request or the entire request if the Air District determines that the disputed matter is overly burdensome or outside the appropriate scope of the DRP.
9. Matters that have been previously resolved or repeatedly raised without new substantive information will not be reconsidered.
10. New information that becomes available after the Air District approval of the emissions inventory or modeling protocol will not be considered to constitute a dispute.

6. Stakeholder Meetings

The Air District will periodically hold meetings with interested stakeholders to explain procedures, answer questions, and inform communities and industry about the status of the emissions inventory reviews, health risk assessments, risk reduction plan reviews, and installation of risk reduction measures. Stakeholders may also inform the Air District about educational or informational needs or public concerns about Rule 11-18 actions, facilities that are subject to Rule 11-18 or otherwise under review, and general air toxics concerns.