San Diego County Emissions Inventories Strategies for Success in 2024 and Beyond

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Webinar Agenda

- Emission Inventory (EI) Triggers
- Completing your 2023 EI
- Source Types – Important Reporting Tips
- Draft EI to Final EI, Working with APCD
- Special Topic: Toxics Emissions Inventory (TEI) Process
- Success in the Future; 2024 Onward

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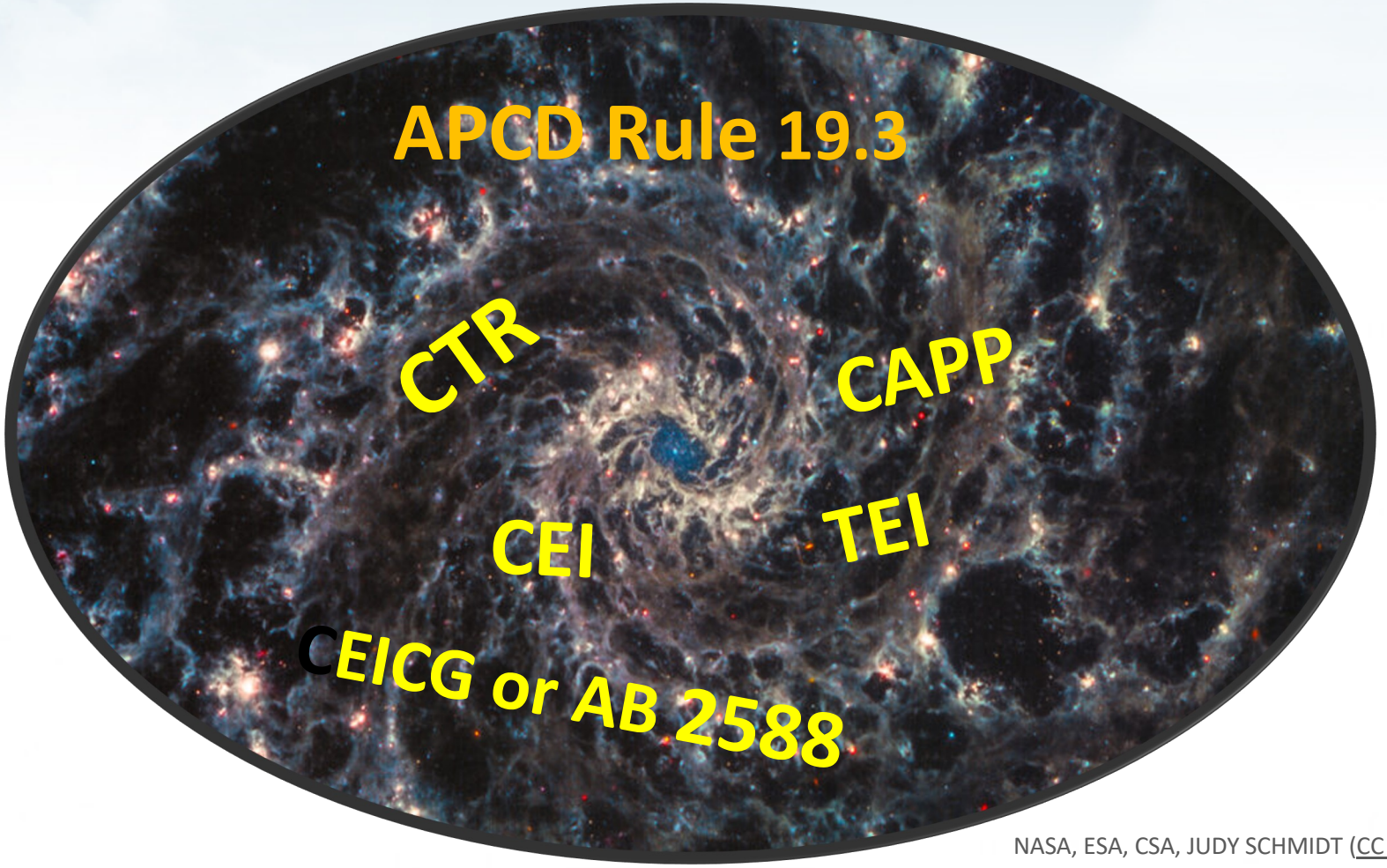
The Ever-Expanding EI Alphabet Soup



NASA, ESA, CSA, JUDY SCHMIDT (CC BY 2.0)

APCD Rule 19.3: www.sdapcd.org/content/dam/sdapcd/documents/rules/current-rules/Rule-19.3.pdf
EICG or AB 2588: ww2.arb.ca.gov/our-work/programs/ab-2588-air-toxics-hot-spots/hot-spots-inventory-guidelines
CTR: ww2.arb.ca.gov/our-work/programs/criteria-and-toxics-reporting
CAPP: ww2.arb.ca.gov/capp

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Facility on the 2023 EI List?

EI Program	Tag	Threshold / *Frequency*
Criteria Emissions Inventory (APCD and EPA program)	CEI	APCD – 5 TPY NOx or VOC EPA - 25 TPY NOx or VOC *Annual reporting*
Criteria Pollutant and Toxics Report (CARB program)	CTR	1. Core – *Annual reporting* 2. Additional Applicability – *Phase 1 (2022); Phase 2 for 2024 reported in 2025*
Toxics Emissions Inventory (CARB EICG or AB2588 program)	TEI	10 TPY Criteria Pollutant or on High Priority List *Quadrennial Reporting*
Community Air Protection Program (CARB Program)	CAPP	Portside and International Border Communities (as needed)

2023 List:
https://lnks.gd/l/eyJhbGciOiJIUzI1NiJ9.eyJidWxsZXRpbl9saW5rX2lkIjoxMDEsInVyaSI6ImJwMjpjbGljayIsInVybCI6Imh0dHBzOi8vd3d3LnNkYXBjZC5vcmcvY29udGVudC9kYW0vc2RhcGNkL2RvY3VtZW50cy9wZXJtaXRzLzIwMjMtRUktRmFjaWxpdGllcy1SZXF1ZXN0Lnhsc3giLCJidWxsZXRpbl9pZCI6IjIwMjQwMTExLjg4NDAzNTExIn0.ioVk4y1YJDHQ-dcFHGlGHP2ux8ntW9wIx4DcujSF1f8/s/1451799883/br/234842348138-l

General Dynamics NASSCO	CTR CEI	San Diego
Canyon Rock	CTR CEI	San Diego
Cabrillo Power I LLC	CTR CEI	Carlsbad
SFPP LP	CEI	San Diego
Commander Navy Region SW	CEI	San Diego
Cypress View Crematory	TEI	San Diego

Get an APCD Letter?
Need my emissions to know if I need to do it? YES!

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CTR Phase-In 2022 and Onward

Table 5. GHG, Criteria, and Elevated Toxics Facility Reporting

Facility Type	Data Year						
	2022	2023	2024	2025	2026	2027	2028+
GHG	X	X	X	X	X	X	X
Criteria	X	X	X	X	X	X	X
Elevated Toxics	X	X	X	X	X	X	X

Table 2. District Grouping

District Group A	District Group B
Bay Area AQMD, Imperial County APCD, Sacramento Metropolitan AQMD, San Diego County APCD, San Joaquin Valley APCD, South Coast AQMD	All other districts

Table 3. Phase-In Summary

District Group	Facility Category	Data Year						
		2022	2023	2024	2025	2026	2027	2028+
A	>4 tpy	X	*NNR*	*NNR*	*NNR*	X	X	X
	Phase 1	X	*NNR*	*NNR*	*NNR*	X	X	X
	Phase 2			X	*NNR*	X	X	X
	Phase 3				X	X	X	X
B	>10 tpy			X	*NNR*	*NNR*	*NNR*	X
	Phase 1			X	*NNR*	*NNR*	*NNR*	X
	Phase 2					X	*NNR*	X
	Phase 3						X	X

NNR = No new CTR reporting requirements; follow existing reporting requirements (e.g., district, NEI).

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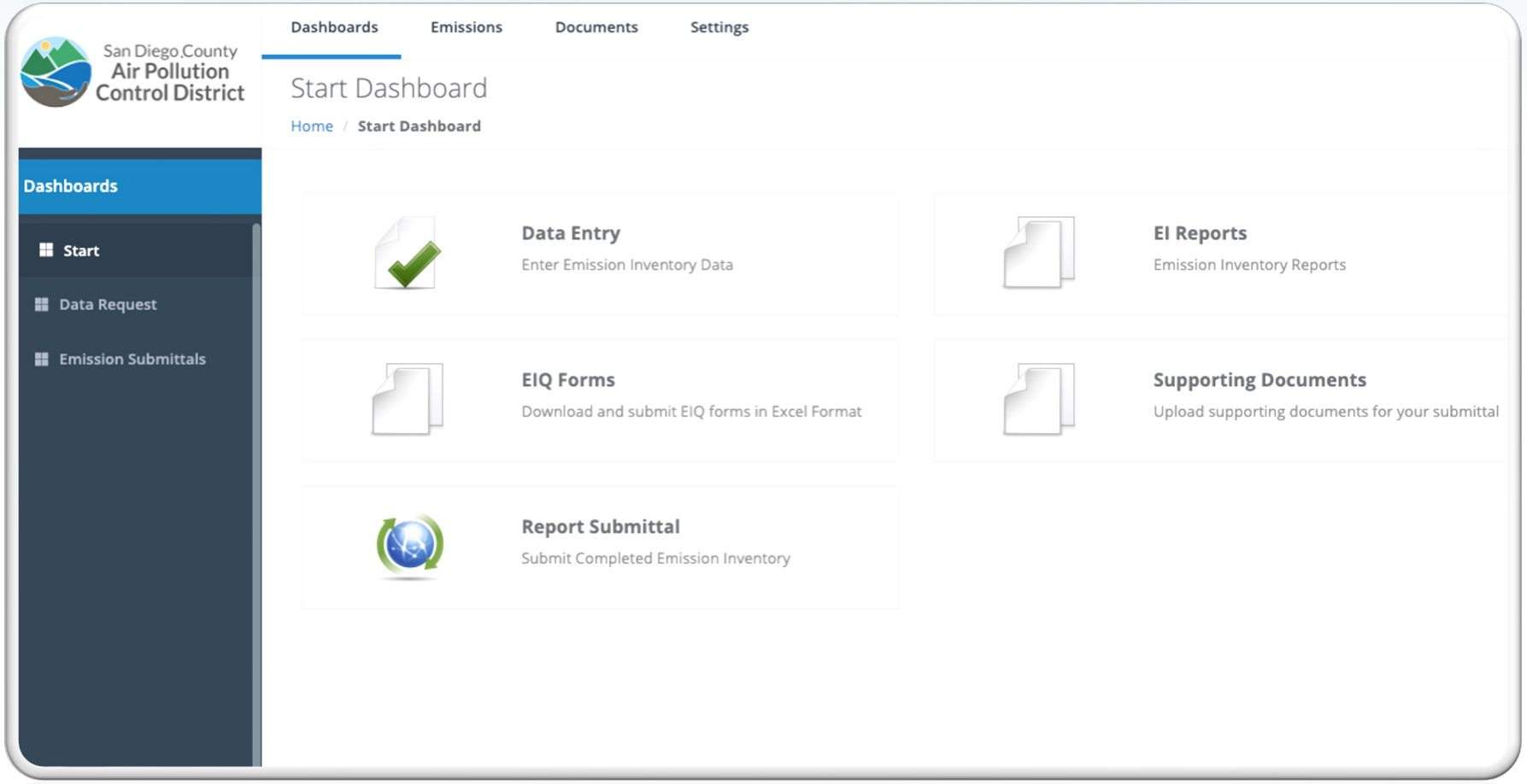
Completing Your 2023 Emissions Inventory



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APCD Emissions Inventory Process

Due April 5, 2024; Extend to May 1

Facility Data Submittal

APCD Completes Draft Air Toxics Inventory

Facility Reviews/Comments on Draft

Comments back in 30 days

APCD Prepares Final Approved Inventory

APCD Prepares Detailed Files for Risk Scoring (if TEI)

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Facility Data Submittal and the Big *So What*

What should I spend my time on?

- Air permits and unpermitted emission sources
- Air toxics sources that *matter*
- Operating parameters and usage, annual and hourly
- Material composition
- Source operation schedules, daily and annual
- Emissions capture and control efficiencies
- Whether emissions are ducted (stack) or fugitive
- Stack parameters – coordinates, heights, flows, diameter, temp, no stack? Rain cap or horizontal?

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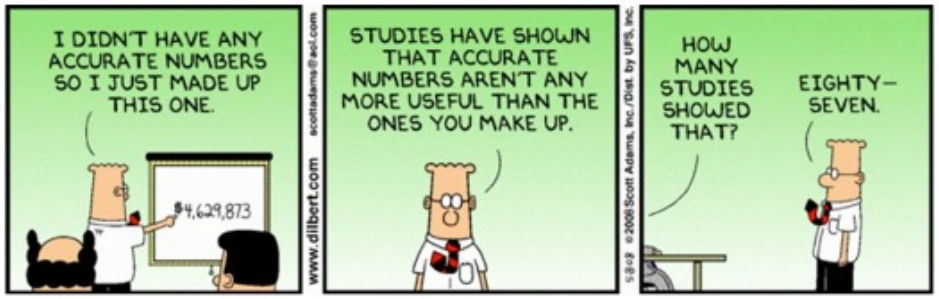
Emission Inventory Accuracy

- What is accurate?
- *How certain are you?*
- Piling on conservative assumptions:
  - Using default emission factors
  - Not consider emissions physics
  - No or low capture or control of emissions
  - Max. permitted hourly fuel or material usage; 100% of rated capacity
  - All facility sources operate at exactly the same time
  - Toxic compound on SDS max % in range (such as 1 – 20%)
  - Not accounting for what is <u>not</u> emitted, waste amounts
- Inadequate or inaccurate documentation
- Assumptions APCD makes – *based on what you submitted*



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But …. It's Not My DeFAULT!

Calculation Procedures

Listed below are some of the general calculation procedures used by the District to calculate emissions that are used for each facility emission inventory. The emission factors listed are default factors and will be used to create emission inventories unless site-specific factors are requested and/or provided by the facilities. Site-specific emission factors may come from a wide range of data sources, including but not limited to Safety Data Sheets (SDS), source tests, Continuous Emissions Monitoring Systems (CEMS), lab analysis/samples, or manufacture's data. Sufficient supporting documentation for site-specific emission factors must be provided and approved by the District for incorporation into emission inventories.

The District uses a web-based program called EIS (Emissions Inventory System) to facilitate the implementation of the emissions inventory programs. EIS allows facilities to submit required inventory information and review their data online. Facilities that are subject to emissions inventory requirements and wish to utilize EIS may contact the District's Emissions Inventory Section at 858-586-2600 or APCDEngineering@sdapcd.org to set up an account.

If you have questions on how to complete the data request forms, common equipment types are listed below and contain links to the appropriate calculation procedure for each equipment type. Instructions can also be found at the link below. Information regarding trade secrets can be found here.

Login to EIS

Emergency Diesel Engine Acute Scenario Guidelines

CTR - STACK Parameter Reporting Instructions

US EPA default stack parameters by Source Classification Code (SCC)

- Abrasive Blasting
- Baking Processes
- Chemical Processing Tanks
- Combustion - Diesel Fired Engines
- Combustion - Gas Fuels
- Combustion - Liquid Fuels
- Degreasing and Solvent Cleaning
- Dry Cleaning
- Electroplating

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Importance of Documentation

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Diesel Engines

- Emergency backup; multiple units; portable engines
- Focus: Diesel particulate matter, speciated toxics and metals, NOx
- Issue 1: All engines operate at same time
- Issue 2: 100% load assumed; engine run hours-to-fuel
- Issue 3: All engines at single distance to receptors
- Issue 4: Default emission factors (1996, 2001)

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Diesel Engines – Acute Risk Scenario Guideline

Acute Scenario Parameters

1. **Acute Scenario Based on Operation Logs/Testing Schedule**
    a. The District will review diesel engine run time based on actual operational logs. In the absence of operational logs, the District has defaulted to assuming they run during the same hour.
    b. Operational logs must include all run time for each engine and will be reviewed to confirm which engines ran during the same hour. Then, the acute scenario with the greatest prioritization score will be applied accordingly.
    c. If two engines run within the same hour, but the logs prove they did not run at the same time and the max hourly is calculated from run time/hour meter, then the engine with the higher prioritization score will be applied.
2. **Duration of Engine Operation (Less than an Hour)**
    a. If the max hourly usage is calculated from run time/hour meter, then applying less than one hour can be accepted.
    b. If the max hourly usage is based off a measured fuel amount, then applying a less than one hour refinement is not accurate. Fuel logs will be required in this scenario.
3. **Applying Engine Load**
    a. Engine load can be applied to emission factors which are created/documented at 100% load, such as certified engine factors.
    b. The default emission factors in the Emissions Inventory System (EIS) come from AP-42 and are measured from a range of loads; therefore, a specific load cannot be applied to the default emission factors.

Uploading Documentation

The best way to account for the above acute scenario parameters is to upload all the required documents into the EIS Portal as part of the initial Emissions Inventory (EI) submittal or revision request. For revision requests, please also email the District with a revision request through APCDInventory@sdapcd.org.

Modification of Permits

The District highly recommends any facility, which has an acute scenario applied based on testing schedule/operation logs, submit applications to the District to modify all their emergency diesel engine permits to create enforceable permit conditions which mirror their testing schedule. This would eliminate the need to produce the operational logs and review the run times for each acute scenario.

Ref: www.sdapcd.org/content/dam/sdapcd/documents/permits/emissions-calculation/Emergency-Diesel-Engine-Acute-Scenario-Guidelines.pdf

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Specialty Coatings & Solvents

- Focus: Highly toxic materials such as HDMI
- Issue 1: Assumption all material is emitted, physics? waste?
- Issue 2: Assumption all material is toxic
- Issue 3: Lack of logs for usage
- Issue 4: Lack of composition information; large % ranges

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Dusty Places

- Aggregate, asphalt, cement, recycling plants, landfills
- Focus: Metals and silica in dust emissions
- Issue 1: Lack of operational data, hauling and transfers
- Issue 2: Lack of documentation; dust controls
- Issue 3: APCD use of older EPA AP-42 emission factors
- Issue 4: Default emission factors, metals in soil
- Issue 5: Default silt content

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Toxic Welding

- Focus: Rods with chromium, arsenic, nickel
- Issue 1: Lack of documentation for actual usage and waste
- Issue 2: Lack of documentation for capture/controls
- Issue 3: Default emission factors, max metals composition from SDS

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Process Lines

- Aerospace, Building Materials industries
- Focus: Chromium, nickel, acids (nitric, HF)
- Issue 1: Lack of documented emission factors
- Issue 2: Lack of documentation for capture/controls
- Issue 3: All tanks operate same time

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Working with APCD – Draft EIs

- What does APCD know and understand?
- APCD may:
  - Select default emission factors you don't agree with
  - Not correctly reflect your operational inputs
  - Change information to address documentation, conservatism
  - Make errors in transferring information
  - Make errors in calculating emissions and risk scores
  - Not know the correct distance to receptors
- Don't accept fate, Review/Ask/Comment!
- Work with APCD to get your EI accurate

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You Can Be More Accurate!!

Issue	You Should Know	Solution
Conservative default emission factors	Simplest to use defaults, or; you may need to justify; do testing well before the EI	Get APCD approval on sampling program, method
Accounting for physics of emissions	Be prepared to justify	Do the math with good backup, reduce uncertainty
Low capture or control efficiency	If not in an air permit or good documentation – APCD may not consider it real	Keep good equipment specs, manufacturer data, check your air permit application; do testing
100% max hourly usage assumed	Equipment rating with 100% load will be used unless you can have better data	***Keep good records***, hourly usage; time stamps, converted from other data
Large chemical range Safety Data Sheet	Maximum in range you provide may be used	Better comp. data; conduct sampling with APCD approval
All sources operating at same time	May have to assumed it unless you have records to prove otherwise	Submit operating logs with date/times with your EI
Not accounting for what is not emitted	Detail on waste manifests may not suffice	Usage logs, not inventory; detailed specific waste sampling and logs
Minimum receptor distances used	APCD may not know details you can provide; providing just a distance may not be enough	Provide a map to APCD showing source(s), receptors, distances

Toxic Emissions Inventories (TEIs)
Staring Down the Rabbit Hole

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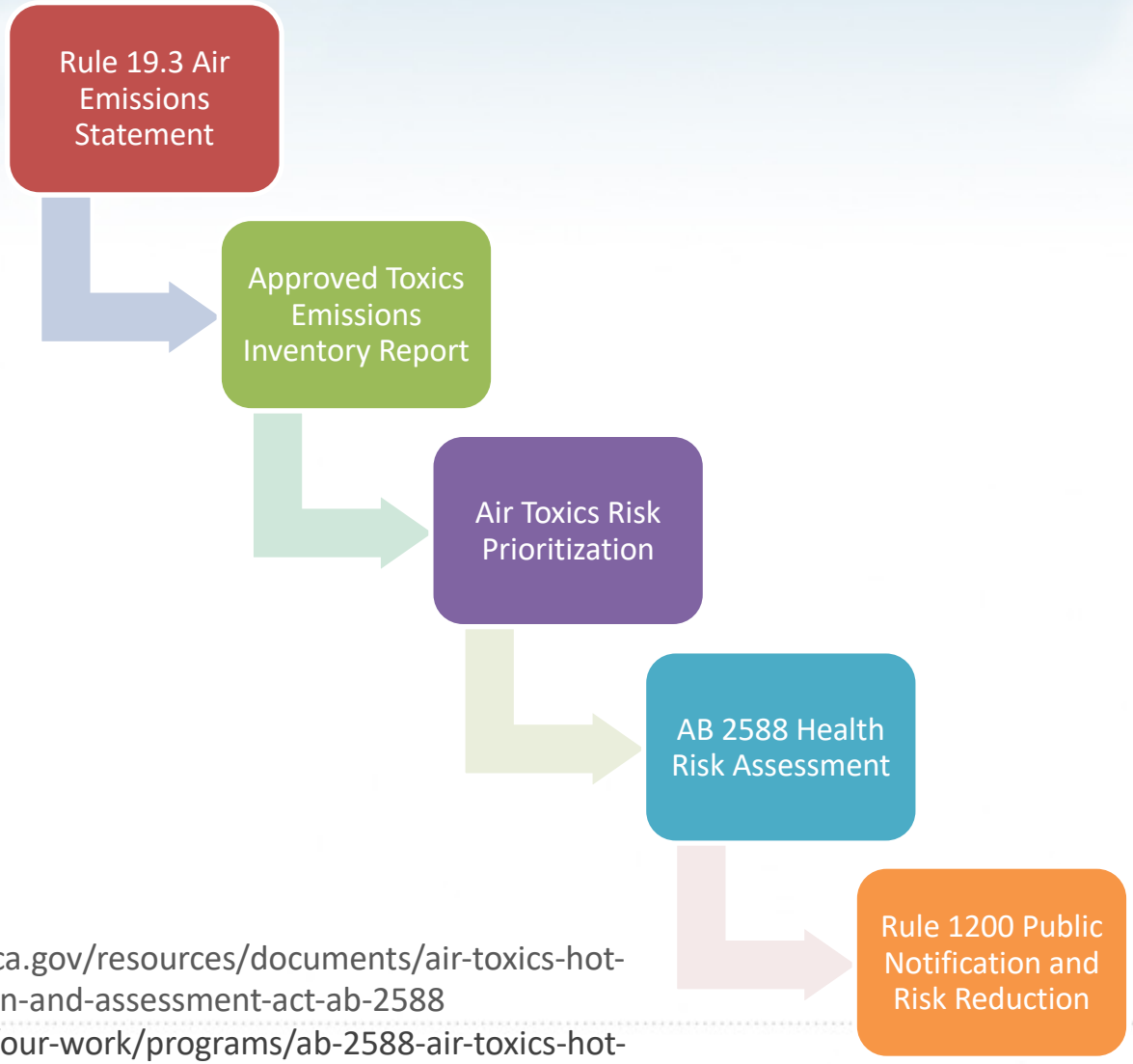
TEI/AB 2588 and Rule 1210 Process



CARB: ww2.arb.ca.gov/resources/documents/air-toxics-hot-spots-information-and-assessment-act-ab-2588

ww2.arb.ca.gov/our-work/programs/ab-2588-air-toxics-hot-spots/hot-spots-inventory-guidelines

SDAPCD: www.sdapcd.org/content/sdapcd/permits/toxics-emissions/hot-spots.html

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Health Risk Assessment Process

Facility Submits the HRA

APCD and OEHHA Review/Comment on HRA

Facility Submits Revised HRA

APCD Prepares Final Approved HRA

Public Notification Plan in 45 days (if required);
Risk Reduction Audit Plan in 180 days (if required)

Facility Comments Again if Needed

APCD Prepares Final, Final Approved HRA

HRA Guidelines:

OEHHA: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0
APCD: www.sdapcd.org/content/dam/sdapcd/documents/permits/air-toxics/Hot-Spots-Guidelines.pdf

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Important Health Risk Analysis Concepts

- Prioritization risk score thresholds - TEI
- Rule 1210 significant risk thresholds
  - 10 in one million or greater Cancer Risk
  - 1.0 or greater Hazard Index (HI) or ratio of concentration/reference level – Chronic, 8-hr Chronic and Acute Risk
  - 1.0 or greater population-wide Cancer Burden
- Annual (cancer, chronic) vs. one-hour average (acute) exposure
- Receptor locations

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Risk Score and Rule 1210 Thresholds

Risk Type	Prioritization Risk Score Threshold	Rule 1210 Risk Threshold
Cancer Risk	100	10 in a million
Chronic Risk	10	1.0 Hazard Index
Acute Risk	10	1.0 Hazard Index

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What Matters In Health Risk Scoring?

- Chemical toxicity
  - Emit a tiny bit o' highly toxic compound
  - Emit a lotta not so toxic compound
  - Emit lots of the same kinds of compounds (cancer or acute impacts) from lots of sources
  - Screen using CARB Consolidated List of Health Values[1]
    - Inhalation Cancer Risk: Arsenic (12 $mg/kg\text{-}day^{-1}$) is 11x more toxic than Diesel Particulate Matter (1.1 $mg/kg\text{-}day^{-1}$)
    - Acute Risk (respiratory): Formaldehyde (55 $\mu g/m^3$ REL) is 58x more toxic than Isopropyl Alcohol (3,200 $\mu g/m^3$ REL)
- Close distance to receptors
- Run your own emissions and risk scores

[1]ww2.arb.ca.gov/sites/default/files/classic/toxics/healthval/contable12092022.pdf

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Success with Future EIs – Rewriting History

- For EIs, you can't go backward only forward?
- Work on your documentation:
  - Current operations
  - Better emission factors
  - Prove what equipment operated
  - Prove when operations occurred
  - Prove emission controls were in place and working
- Work toward a better EI-day!

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Summary Tips EIs, 2023 and the Future

- *Success:* A better emissions inventory is more accurate!
- Can't change the past, work to improve the future
- *Take control* of the EI outcome
  - Get organized and educated
  - Know what matters for your site/equipment
  - Think about the good documentation
  - Provide APCD information up front
  - Get Help from APCD or a specialist, early and often
- Best of luck on your 2023 EI and beyond!

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Questions / Contact Information

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