Working Group Meeting #3

March 5, 2026, 2:30 p.m.

Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants

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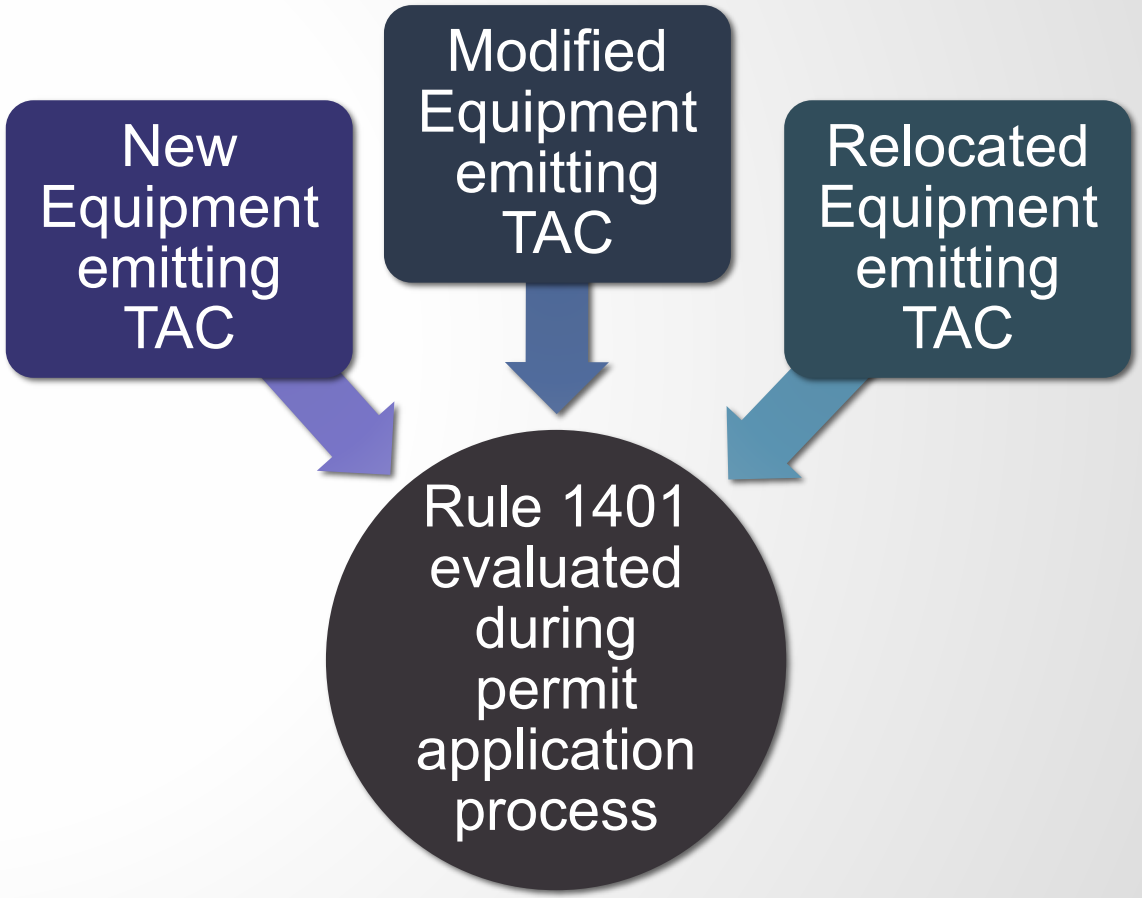
Agenda

- PAR 1401 Rule Development Recap
- Proposed Rule Amendments
- Regulatory Impacts
- Next Steps

PAR 1401 Rule Development Recap

Rule 1401 Background

- Rule 1401 applies during a permit application process
  - Ensures that new, modified, or relocated equipment or sources meet specific health risk levels for toxic air contaminants (TACs)
  - TACs evaluated are those identified by California Office of Environmental Health Hazard Assessment (OEHHA)
- Rule 1401 amendments affect future permit actions, not existing permits where no further permit actions are taken



Rule 1401 Background (cont'd)

- Rule 1401 Table I lists the TACs identified by OEHHA
- OEHHA develops health-protective exposure levels as guidance for regulatory agencies and the public
  - Cancer risks: Cancer potency factors
  - Noncancer risks: Acute, 8-hour, and chronic Reference Exposure Levels (RELs)
  - Most updated list can be found on California Air Resources Board's (CARB) website*

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE CANCER	EFFECTIVE DATE CHRONIC	EFFECTIVE DATE ACUTE
108-39-4	cresol, m-		June 15, 2001	
95-48-7	cresol, o-		June 15, 2001	
106-44-5	cresol, p-		June 15, 2001	
135-20-6	cupferron	January 8, 1999		
	dialkylnitrosamines			
924-16-3	nitrosodi-n-butylamine, n-	December 7, 1990		
621-64-7	nitrosodi-n-propylamine, n-	September 8, 1998		
55-18-5	nitrosodiethylamine, n-	December 7, 1990		
62-75-9	nitrosodimethylamine, n-	December 7, 1990		
10595-95-6	nitrosomethylethylamine, n-	September 8, 1998		
615-05-4	diaminoanisole, 2,4- (sulfate)	January 8, 1999		
95-80-7	diaminotoluene, 2,4-	January 8, 1999		
	dibenzo-p-dioxins (chlorinated)			
1746-01-6	tetrachlorodibenzo-p-dioxin, 2,3,7,8-	June 1, 1990	August 18, 2000	
40321-76-4	pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	June 1, 1990	August 18, 2000	
39227-28-6	hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	June 1, 1990	August 18, 2000	
57653-85-7	hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-	June 1, 1990	August 18, 2000	
19408-74-3	hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-	June 1, 1990	August 18, 2000	
35822-46-9	heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-	June 1, 1990	August 18, 2000	
3268-87-9	octachlorodibenzo-p-dioxin, 1,2,3,4, 6,7,8,9-	June 1, 1990	August 18, 2000	

*https://ww2.arb.ca.gov/resources/documents/consolidated-table-oehha-carb-approved-risk-assessment-health-values

Use of Rule 1401 in Permit Evaluation

- Rule 1401 specifies health risk thresholds for new permit units, relocations, or modifications to existing permit units, which emit TACs listed in Table 1

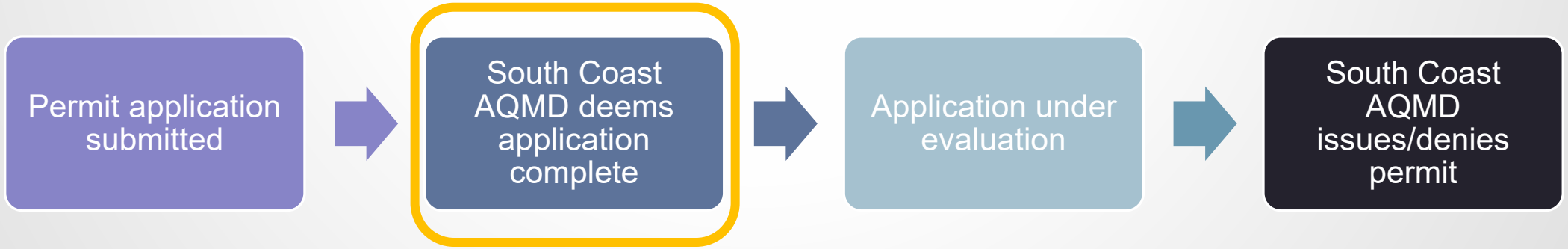
Cancer Risk Threshold	Noncancer Risk Threshold
1 in a million without T-BACT*	Acute hazard index of 1
10 in a million with T-BACT*	Chronic hazard index of 1

**Best Available Control Technology for Toxics*

- If the health risk from the unit exceeds any of the thresholds, the permit application would be denied
  - Risk Assessment Procedures prescribe the methodology used when evaluating health risks
  - Health risks can be affected by certain factors such as throughput, air pollution controls, and distance to sensitive receptors

Rule 1401 Applicability

- Rule 1401 applies when a facility submits a permit application for a new, modified (resulting in health risk increase), or relocated equipment or source that emits any TACs listed in Rule 1401 Table 1
- The rule version to comply with (existing Table 1 vs. PAR 1401 Table 1) depends on when the permit application is deemed complete
  - PAR 1401 Table 1 applies for new, modified, or relocated permit applications **deemed complete after** PAR 1401 is adopted



2024 Proposed Amendments to Rule 1401

- Rule 1401 is periodically updated to reflect the new TACs identified by OEHHA
- PAR 1401 initially proposed to update Table I to include the following new compounds:

Compound Name	CAS Number
1-bromopropane	106-94-5
Trivalent chromium	16065-83-1
Parachlorobenzotrifluoride (PCBTF)	98-56-6
Tertiary Butyl Acetate (TBAc)	540-88-5
Hexamethylene Diisocyanate (HDI) (Monomer)	822-06-0
Polymeric Hexamethylene Diisocyanate	1221*
Cobalt	7440-48-4
Trimethylbenzenes	25551-13-7

*4-digit Air Toxics Hot Spots Emission Inventory Code assigned by CARB

Working Group Meeting #2 Recap

- PAR 1401 Working Group Meeting #2 held on July 9, 2024
- Summarized proposed amendments to Rule 1401
- Provided overview of regulatory impacts for each new compound being added into Table 1
- PAR 1401 rule development was paused to allow time for source specific VOC rules to be amended to address PCBTF and TBAc

Compounds estimated to have minimal regulatory impacts	Compounds estimated to have significant impacts	More information is needed
• 1-bromopropane • Trivalent chromium • Monomeric HDI • Trimethylbenzene • Cobalt	• PCBTF • TBAc	• Polymeric HDI

PCBTF and TBAc

- Control of VOC emissions plays a critical role in reducing ground level ozone and particulate matter
- South Coast AQMD rules have established VOC content limits for a variety of coating/solvent cleaning products used on various substrates (e.g., wood) or industry (e.g., aerospace)
  - Manufacturers have reformulated products to meet VOC limits
    - In some cases, this reformulation has involved use of solvents with lower reactivity, including PCBTF or TBAc
- OEHHA recently established toxic risk factors for PCBTF and TBAc
- South Coast AQMD Governing Board has identified the priority to reduce toxic emissions, even if this approach results in higher VOC emissions

PAR 1401 Rule Development Timeline

September 2017
- Rule 1401 amended

April 2023 – May 2024
- Proposed Amended Rule 1401 development begins
- Conducted two working meetings

July 2024
- Paused rule development

September 2025
- Resumed rule development

- Amendments to source specific VOC rules are needed to:
  - Allow manufacturers time to reformulate products and provide alternatives to these toxic containing products
  - Reduce toxic emissions for existing, new, modified, or relocated equipment and result in greater protection of public health
- PAR 1401 rule development was paused to give time for VOC rule amendments and return with a more comprehensive package addressing anticipated impacts from PAR 1401

Overview of Rules Addressing PCBTF and TBAC

- Four rules have been adopted to phase out and prohibit the use of PCBTF and TBAc

2022	2024	2025
• Rule 1168 – Adhesives and Sealants	• Rule 1151 – Automotive Coating	• Rule 1171 – Solvent Cleaning Operations • Rule 1107 – Coating of Metal Parts and Products

- Key requirements include:
  - Prohibiting usage of products containing more than 0.01% PCBTF and TBAc by weight
  - Implementing a phase out schedule to prohibit further selling and manufacturing of products containing more than 0.01% by weight of PCBTF and TBAc

Proposed Rule Amendments

Updated Proposed Amendments to Rule 1401 - Compounds

- While PAR 1401 was paused, OEHHA revised the guidance document by:
  - Adding a new compound with a new risk threshold
  - Modifying an existing compound by adding acute and 8-hr risk thresholds

Compound Name	CAS Number
 Isoprene	78-79-5
 1-4-dichlorobenzene	106-46-7

Updated Proposed Amendments to Rule 1401

- South Coast AQMD permitting process includes the evaluation for offsite worker exposure which uses the 8-hr REL
- For clarity, PAR 1401 will update Table I to include a column for 8-hr REL effective dates

TABLE I
TOXIC AIR CONTAMINANTS

CAS #	SUBSTANCE	EFFECTIVE DATE			
		CANCER	CHRONIC	8-HOUR	ACUTE
75-07-0	acetaldehyde	12/07/1990	09/08/1998	09/08/1998	09/10/2010
60-35-5	acetamide	01/08/1999			
107-02-8	acrolein		06/15/2001	06/15/2001	08/13/1999
79-06-1	acrylamide (or propenamide)	12/07/1990	**		
79-10-7	acrylic acid		*		08/13/1999
107-13-1	acrylonitrile (or vinyl cyanide)	12/07/1990	05/03/2002		
107-05-1	allyl chloride	01/08/1999			
117-79-3	aminoanthraquinone, 2-	01/08/1999			
7664-41-7	ammonia		08/18/2000		08/13/1999
62-53-3 142-04-1	**aniline** aniline hydrochloride	01/08/1999 01/08/1999			

Regulatory Impacts

Evaluation of Regulatory Impacts

- To evaluate potential impacts to future permit evaluations resulting from adding compounds to Table I, the following general process is used:

STEP 1: Identify potential emission source

- Technical Support Documents by OEHHA
- Annual Emission Reporting (AER)
- Permit applications (2018 - 2023)

STEP 2: Evaluate the potential impacts

- Evaluation method dependent on the type of source and other available information
- Example: review a representative sample of permit applications for impacted emission sources

- Results of preliminary evaluation provided in subsequent slides

Evaluation Status of Compounds

- Previously assessed regulatory impacts determined that the following compounds are estimated to have minimal regulatory impacts:

1-bromopropane	Cobalt	Trivalent Chromium	Trimethylbenzene

- The upcoming slides will discuss the updated regulatory impacts for the following compounds:

Isoprene	1,4-Dichlorobenzene	PCBTF and TBAc	Monomer and Polymeric HDI

Isoprene (CAS 78-79-5)

Noncancer Risk Factors	Cancer Risk Factors
Not Applicable	To be added

- Isoprene is a colorless liquid with a mild petroleum like odor
- Sources include thermal cracking of petroleum naphtha, biomass combustion, synthetic rubber production, wood pulping, and exhaust from turbines and automobiles*
- Based on Annual Emission Reporting and permitting data, petroleum refineries are the source within South Coast AQMD

*https://oehha.ca.gov/sites/default/files/media/2025-01/IsopreneIUR010325.pdf

Isoprene (continued)

- At petroleum refineries, isoprene is one of the VOCs emitted during the “cracking” of heavier petroleum components to lighter petroleum distillates at the fluid catalytic cracking unit
- Emissions generated during this process are captured and vented to vapor recovery systems
- Vapor recovery systems and associated components are subject to existing South Coast AQMD permit conditions and rule requirements that minimize emissions

Preliminary Assessment: The addition of isoprene is expected to have minimal impacts for permitting new, modified, or relocated equipment

1,4-Dichlorobenzene (CAS: 106-46-7)

Noncancer Risk Factors	Cancer Risk Factors
To be Added	Already in Table 1

- 1,4-Dichlorobenzene is a colorless or white crystalline solid that sublimes at ambient temperatures
- Sources include deodorant for toilets, urinals, and refuse containers, moth repellant for clothing, fumigant to control mold, and landfills*
- Based on Annual Emission Reporting and permitting data, sewage treatment plants, landfills, and refineries are the primary sources within South Coast AQMD

* https://oehha.ca.gov/sites/default/files/media/2025-07/1%2C4-DCB%20REL071825_2.pdf

1,4-Dichlorobenzene (continued)

- Staff conducted a review of permit applications for landfills, sewage treatment plants, and refineries
- 1,4-Dichlorobenzene and benzene are two TACs emitted by these sources
  - Benzene is emitted at a higher quantity and is the driving risk factor for these operations due to its noncancer RELs
- Equipment at refineries and sewage treatment plants are vented to controls

- **Preliminary Assessment:** The additional risk from adding 1,4-dichlorobenzene is expected to have minimal impacts on permitting new, modified, or relocated equipment due to benzene being the driving risk factor and equipment is vented to a control device

Parachlorbenzotriflouride (PCBTF) and Tertiary-butyl-acetate (TBAc)

VOC rules have been amended to phase out PCBTF and TBAc

Rulemaking underway for other VOC rules

Recently Adopted:
Rule 1151 - Motor Vehicle and Motor Equipment Non-Assembly Line Coating Operations
Rule 1168 - Adhesive and Sealant Applications
Rule 1171 - Solvent Cleaning Operations

In Rule Development*:
Rule 1107 - Coating of Metal Parts and Products
Rule 1124 - Aerospace Assembly and Component Manufacturing Operations
Rule 1136 - Wood Products Coatings

- **Preliminary Assessment:** The additional risk from adding PCBTF and TBAc is expected to have minimal impacts on permitting new, modified, or relocated equipment due to source specific VOC rule requirements to mitigate emissions

**Rulemaking for 12 other VOC rules underway, more information can be found here: https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules*

Hexamethylene Diisocyanate (HDI) (Monomer and Polyisocyanates)

	Noncancer Risk Factors	Cancer Risk Factors
HDI (monomer)	To be added	Not applicable
Polymeric HDI	To be added	Not applicable

- HDI monomer is an organic compound that is a clear to slightly yellow liquid
- Polyisocyanates or Polymeric HDI is the term often used to refer to a mixture of HDI monomer and various higher molecular weight diisocyanate reaction products*
- Sources include hardeners for automobile and airplane polyurethane spray paints, including primers, sealers, and clear coats, and coatings for outdoor furniture, parquet and industrial wood, and architectural finishing
- Based on Annual Emission Reporting and permitting data, the main sources at South Coast AQMD are spray booths using hardeners and spraying coatings

*https://oehha.ca.gov/media/downloads/crnr/hidrel090519.pdf

Hexamethylene Diisocyanate (HDI) (Monomer and Polyisocyanates) (continued)

- Staff is conducting a review of 90 spray booth permit applications (2018-2023)
  - Monomeric HDI present in hardeners with a concentration less than or equal to 1% by weight
  - Polymeric HDI present in hardeners with a concentration up to 100% by weight
- A study conducted by the Ontario Ministry of the Environment in 2006 concluded an emission rate of 4.8%-6.3%
- Permitting Polymeric HDI may be challenging as the acceptable uncontrolled amount would be restrictive
  - Controls are generally not feasible

Hexamethylene Diisocyanate (HDI) (Monomer and Polyisocyanates) (continued)

Preliminary Assessment:

- Additional analysis is needed to understand:
  - Concentration ranges of polymeric HDI in hardeners
  - How common hardeners are used
  - Polymeric HDI emission rate

Stakeholder Input Requested

1. Additional information about polymeric HDI emission rates
2. Usage and mixing ratios of hardeners in coating applications
3. Are there hardener alternatives that do not contain polymeric HDI (CAS: 28182-81-2)?

Regulatory Impact Summary

Compounds estimated to have minimal regulatory impacts	Compounds estimated to have significant impacts	More information is needed
• 1-bromopropane • Trimethylbenzene • Cobalt • PCBTF • TBAc • Trivalent Chromium • Isoprene • 1,4-Dichlorobenzene	• N/A	• HDI Monomer • HDI Polymer

Next Steps

Conduct Public Workshop

Public Hearing scheduled in June

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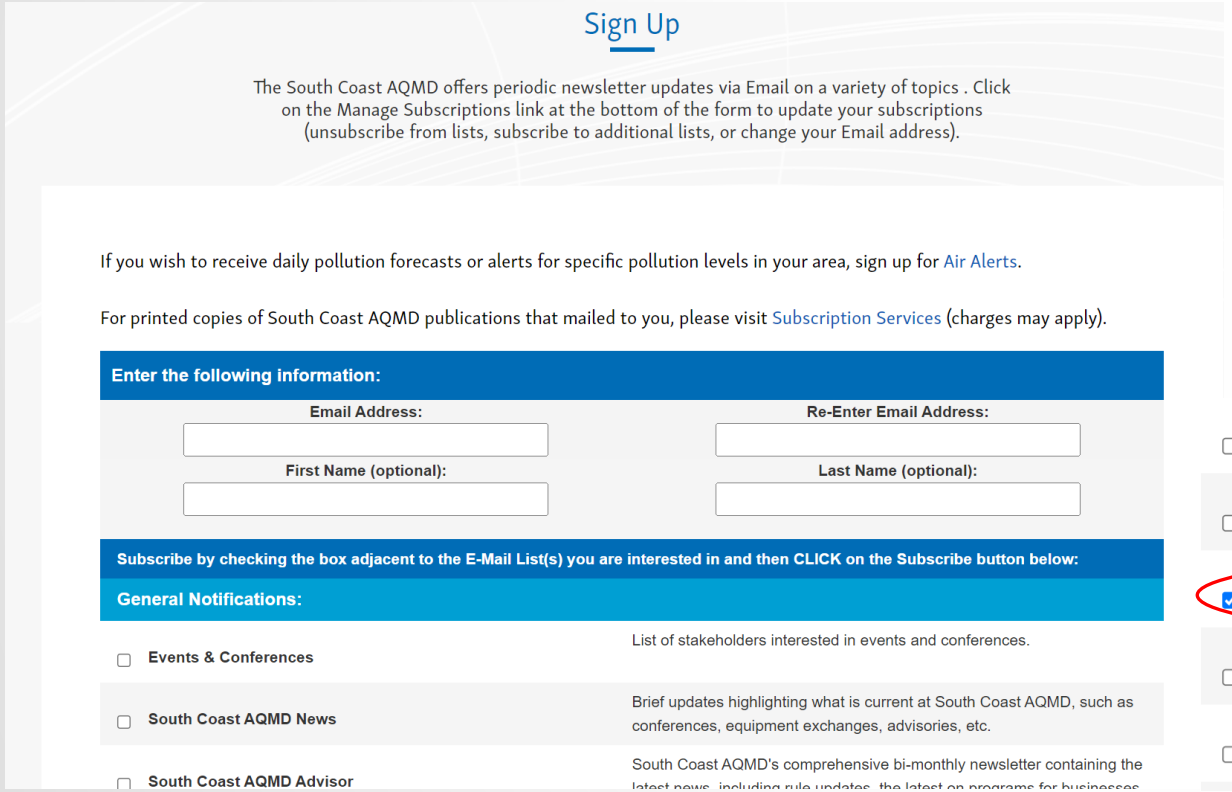

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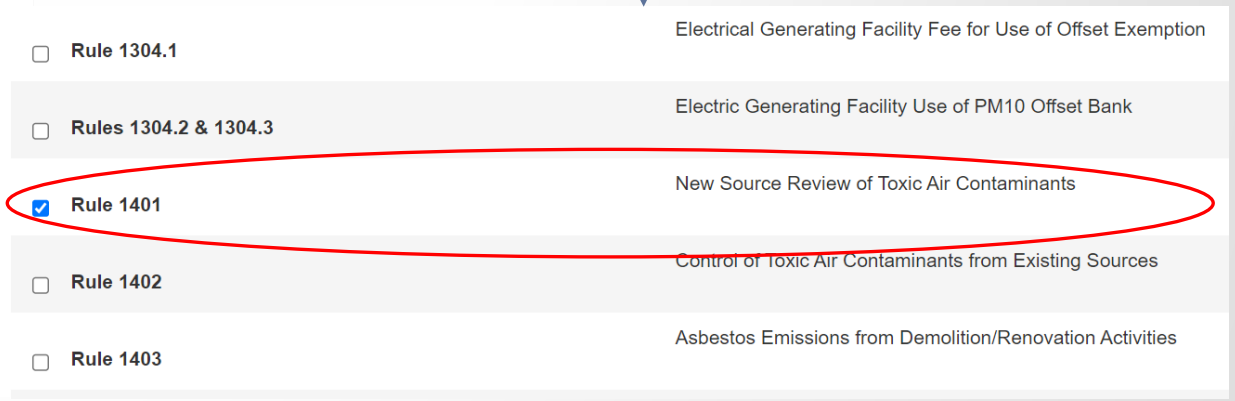

☐ Rule 1304.1	Electrical Generating Facility Fee for Use of Offset Exemption
☐ Rules 1304.2 & 1304.3	Electric Generating Facility Use of PM10 Offset Bank
☑ Rule 1401	New Source Review of Toxic Air Contaminants
☐ Rule 1402	Control of Toxic Air Contaminants from Existing Sources
☐ Rule 1403	Asbestos Emissions from Demolition/Renovation Activities

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