

NOTICE OF PROPOSED ACTION

CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS – OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

TITLE 8. INDUSTRIAL RELATIONS DIVISION 1. DEPARTMENT OF INDUSTRIAL RELATIONS CHAPTER 4. DIVISION OF INDUSTRIAL SAFETY ARTICLE 1. GENERAL INDUSTRY SAFETY ORDERS GROUP 16. CONTROL OF HAZARDOUS SUBSTANCE ARTICLE 107 DUSTS, FUMES, MISTS, VAPORS AND GASES SECTION 5155

AIRBORNE CONTAMINANTS – TRICHLOROETHYLENE (TCE)

NOTICE IS HEREBY GIVEN that the California Department Industrial Relations – Occupational Safety and Health Standards Board (Board) proposes to amend regulations governing airborne contaminants - trichloroethylene, which are established by Title 8 of the California Codes of Regulations, section 5155. If approved, the proposed regulation would reduce the TCE PEL in section 5155 Table AC-1 to 0.24 ppm (1.3 mg/m³) and withdraw the existing STEL and ceiling limits.

A public hearing has been scheduled at which time any interested party may present statements, orally or in writing, about this proposed regulatory action. The hearing will continue until all oral comments are received, and will be held as follows:

Date: December 17, 2026

Location: **California State University, Stanislaus**
Mart Stuart Rogers Building, Room MSR 130
One University Circle
Turlock, California 95382

OR

Videoconference: <https://tkoworks.zoom.us/j/87501250331>
(Conference ID: 875 0125 0331)

Call-in Number: (669) 444-9171
(Conference ID: 875 0125 0331)

Live video stream and audio stream (English and Spanish):
<https://videobookcase.com/california/oshsb>

Time: 10:00am

Pre-hearing registration will be conducted prior to the hearing. Those registered will be heard in order of their registration. Anyone else wishing to speak at the hearing will be afforded an opportunity after those registered have presented their oral comments. The time allowed for each person to present oral comments may be limited if a substantial number of people wish to speak.

Individuals presenting oral comments are requested, but not required, to submit a written copy of their statements. The hearing will be adjourned immediately following the completion of the oral comments.

SUBMISSION OF WRITTEN COMMENTS

Any interested person, or their authorized representative, may submit written comments relevant to this proposed regulatory action. All written comments must be received by the Board no later than 5:00 p.m. on December 17, 2026, in order to be considered. Written comments may be submitted by mail, email, or fax as follows:

By mail to: Department of Industrial Relations – Occupational Safety
and Health Standards Board
ATTN: Airborne Contaminants – Trichloroethylene (TCE)
2520 Venture Oaks Way, STE. 350
Sacramento, CA 95833

By email to: oshsbrulemaking@dir.ca.gov
Subject: Airborne Contaminants – Trichloroethylene
(TCE) – Darus Wise

PERMANENT ADOPTION OF REGULATIONS

Following the public comment period, the Board may adopt the proposals, as described below, or may modify the proposals if the modifications are sufficiently related to the original text. With the exception of minor technical or grammatical changes, the text of any modified proposal will be available for at least 15-days prior to its adoption from the contact person(s) designated in this notice and will be mailed to those persons who have submitted written or oral testimony related to this proposal or who have requested notification of any changes to the proposal. The Board will accept written comments on the modified regulations during the 15-day period.

AUTHORITY AND REFERENCE

The authority and reference for this action occur through both implied and express authority as described below:

Authority: Labor Code Section 142.3

Reference: Labor Codes 142.3 and 144.6

INFORMATIVE DIGEST

SUMMARY OF EXISTING LAW

Labor Code section 142.3 establishes the Board as the only agency in the State authorized to adopt occupational safety and health standards. In addition, Labor Code section 142.3 requires the adoption of occupational and health standards that are at least as effective as federal occupational safety and health standards.

The proposed regulations implement, interpret, and make specific Labor Code section 144.6. Labor Code section 144.6 requires that the Board when dealing with standards for toxic materials and harmful physical agents, adopt standards which most adequately assure, to the extent feasible, that no employee suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard for the period of their working lifetime. This section also requires that the Standards Board base standards on research, demonstrations, experiments and other information as may be appropriate. Labor Code section 144.6 also lists other considerations such as the latest scientific literature, the reasonableness of the standards, and experience gained under this and other health and safety laws.

SUMMARY OF EXISTING REGULATIONS

Under California Code of Regulations (CCR) title 8, section 5155, Airborne Contaminants, the existing 8-hour, time-weighted average (TWA) permissible exposure limit (PEL) for trichloroethylene (TCE), Chemical Abstracts Registry #79016, is 25 parts per million (ppm), which is equivalent to 135 milligrams per cubic meter (mg/m³).

The TWA is the employee's average airborne exposure to a substance in any 8-hour work shift of a 40-hour work week which shall not be exceeded. The 8-hour TWA PEL is the level of exposure established as the highest level of exposure an employee may be exposed to without incurring the risk of adverse health effects. PPM is a unit of measurement that describes the concentration of a substance within a mixture. It represents the number of "parts" of a substance for every million parts of the whole mixture. For example, 1 ppm means one part of the substance for every one million parts of the mixture. The concentration of a substance in a mixture can also be described using mg/m³, which represents the mass of a substance in milligrams in one cubic meter of air.

The existing 15-minute short-term exposure limit (STEL) is 100 ppm and the ceiling limit is 300 ppm.

SUMMARY OF THE EFFECT OF PROPOSED REGULATORY ACTION

The purpose of this proposed regulation is to reduce the TCE PEL in section 5155 Table AC-1 to 0.24 ppm (1.3 mg/m³) and withdraw the existing STEL and ceiling limits.

The revised PEL of 0.24 ppm meets the Board's 1:1000 cancer risk threshold and is consistent with the following:

- 1997 Recommendation of the Division's Airborne Contaminants Advisory Committee;
- 2007 Analysis by the Cal/OSHA Office of Environmental Health Hazard Assessment (OEHHA);
- 2010 Recommendation by the Division's Health Effects Advisory Committee (HEAC);
- 2011 Toxicological Review of Trichloroethylene by the U.S. Environmental Protection Agency (EPA);
- 2012 Analysis by OEHHA;
- 2014 Analysis by the International Agency for Research on Cancer (IARC);
- 2015 Reassessment by the Hazard Evaluation System and Information Service (HESIS) of the California Department of Public Health (CDPH) for the HEAC;
- 2020 Risk Evaluation for Trichloroethylene by U.S. EPA;
- 2024 U.S. EPA Risk Management Rule under the Toxic Substances Control Act (TSCA).

The federal OSHA Sampling and Analytical Method 1001 for trichloroethylene shows that the proposed PEL of 0.24 ppm is reliably quantifiable in the laboratory with both 4-hour and 8-hour sample periods. The federal OSHA quantitation limit for TCE is 0.013 ppm (0.068 mg/m³) in workplace air, using personal sampling pumps to draw air at a rate of 50 mL/min through coconut shell adsorbent charcoal tubes.

What is the problem this rulemaking intends to address?

Trichloroethylene is a colorless, nonflammable, volatile liquid that evaporates quickly in air. Its two major uses are as a solvent to remove grease from metal parts and as a chemical intermediate to make other chemicals, particularly the refrigerant, HFC-134a. It has also been used as an extraction solvent for greases, oils, fats, waxes, and tars; by the textile processing industry to scour cotton, wool, and other fabrics; in dry cleaning operations; and as a component of adhesives, lubricants, paints, varnishes, paint strippers, pesticides, and cold metal cleaners.

The PEL for TCE was established in 1988, based on evidence of "central nervous system impairment, cognitive decrements and renal toxicity," before TCE was confirmed to be a human carcinogen. As a result, the TCE PEL is not protective against the health endpoint of cancer. In fact, based on the most recent 2011 risk assessment by U.S. EPA, which was confirmed by OEHHA in 2012 and by HESIS in 2015, the Board calculated that exposure over a working lifetime to TCE at the existing PEL of 25 ppm results in a cancer risk of 106 cases per 1,000 workers, more than 100 times over the Board's 1:1000 cancer risk threshold. The proposed reduction of the PEL to 0.24 ppm reduces the lifetime cancer risk to one in 1,000 workers.

Since the Board's original action on TCE in 1988, multiple scientific bodies have confirmed that TCE is carcinogenic. These include the U.S. EPA, which classified TCE

as a “known human carcinogen” in 2011; IARC, which classified TCE as a Group 1 carcinogen in 2014, based on “convincing evidence that the agent causes cancer in humans;” the U.S. Center for Disease Control’s (CDC) National Institute for Occupational Safety and Health (NIOSH), which lists TCE as a “known carcinogen;” the U.S. CDC’s Agency for Toxic Substances and Disease Registry (ATSDR), which describes TCE as “known to be a human carcinogen based on sufficient evidence of carcinogenicity from humans” in its 2019 Toxicological Profile for TCE; the U.S. EPA’s reaffirmation in 2020 of its 2011 toxicological review; and, based on these assessments, the U.S. EPA’s proposed prohibition on nearly all commercial and consumer uses of TCE in 2024, with certain exceptions. This most recent action has since been delayed by the Trump Administration and the Third Circuit Court of Appeals.

Because the TCE PEL has not been updated to reflect these findings, it is no longer consistent with the scientific evidence and is therefore not sufficiently protective of workers. It is therefore no longer consistent with Labor Code sections 144.6 and 147.1 or with CCR title 8, section 5155.

In 2010, HESIS applied a quantitative risk assessment (QRA) approach to TCE using OEHHA’s updated cancer unit risk level (URL) of $2.0 \times 10^{-3} \text{ (mg/m}^3\text{)}^{-1}$ and recommended that the HEAC reduce the PEL from 25 ppm to 0.40 ppm. The HEAC did not act on the HESIS recommendation.

In 2015, HESIS returned to the HEAC with a revised TCE PEL recommendation of 0.20 ppm (rounded down from 0.24 ppm) based on U.S. EPA’s 2011 amended URL of $4.0 \times 10^{-3} \text{ (mg/m}^3\text{)}^{-1}$, which represents twice the cancer potency compared to the 2010 estimate of $2.0 \times 10^{-3} \text{ (mg/m}^3\text{)}^{-1}$. EPA reported that TCE is “carcinogenic to humans by all routes of exposure, based on convincing evidence of a causal association between trichloroethylene exposure of humans and kidney cancer.” OEHHA evaluated and confirmed these findings in 2012. Again, however, the HEAC did not act on the HESIS recommendation.

The current proposal to reduce the TCE PEL from 25 ppm to 0.24 ppm reaffirms the HESIS recommendation from 2015, using the updated URL of $4.0 \times 10^{-3} \text{ (mg/m}^3\text{)}^{-1}$.

In addition, under the proposed TCE PEL reduction, the existing STEL and ceiling limit for TCE are no longer appropriate or necessary. An STEL is used to supplement the 8-hour TWA PEL “where there are recognized acute effects from a substance whose toxic effects are primarily of a chronic nature.” These effects include, for example, “narcosis of sufficient degree to increase the likelihood of accidental injury, impaired self-rescue, or materially reduced work efficiency.” Under section 5155, the STEL is defined as “a 15-minute time-weighted average exposure which is not to be exceeded at any time during a workday even if the 8-hour time-weighted average is below the PEL.”

The threshold for mild central nervous system (CNS) depression for TCE is in the range 81-110 ppm. However, a single, 15-minute (short-term) exposure to TCE at 81 ppm during an 8-hour workday results in an 8-hour TWA of 2.5 ppm, assuming no other TCE exposures occur during the remaining 7.75 hours. This is more than 12 times greater

than the proposed 8-hour TWA PEL of 0.24 ppm in this rulemaking. The STEL is therefore not relevant. This same finding applies in the case of the TCE ceiling limit. Because air concentrations of TCE cannot approach the 15-minute STEL or ceiling limit without exceeding the proposed 8-hour PEL, this rulemaking withdraws the existing STEL and ceiling limit. In this way, the proposed 8-hour TWA PEL also protects against the short-term neurological effects of TCE more effectively than the existing STEL and ceiling limit.

Overall, the effect of the proposed TCE PEL reduction will be to reduce the risk of cancer among workers exposed to TCE from 106 expected cases per 1,000 workers to one case per 1,000 workers. In addition to cancer, the proposed PEL reduction is also expected to protect (at least in part) against other TCE health endpoints identified by U.S. EPA, including damage to the central nervous system, kidney, liver, immune system, reproductive system, and developing fetus.

Is the proposed regulation consistent with state and Federal requirements?

The proposed changes to title 8, section 5155 are considered to be at least as effective as, or more stringent than, the federal OSHA requirements for these substances found at title 29 of the Code of Federal Regulations (title 29 CFR) section 1910.1000 for Air Contaminants.

This proposal differs from existing federal standards in that the proposed PEL value for TCE of 0.24 ppm is about 400 times lower than the PEL of 100 ppm found in the federal air contaminants standard at 29 CFR 1910.1000. The federal TCE PEL is a result of the 1992 decision of the U.S. Court of Appeals, Eleventh Circuit, which vacated federal OSHA's revised 1989 PELs, including for TCE. As a result, the federal standards for air contaminants have remained largely unrevised since their promulgation in the early 1970s, with the exception of a small number of substances for which individual comprehensive chemical hazard control standards have been promulgated, primarily for carcinogens. Since the federal standards were promulgated over 40 years ago, considerable scientific evidence has since shown that TCE is a known human carcinogen, as noted above.

Labor Code section 147.1(c) mandates that the Division maintain surveillance, determine the necessity for standards, and develop and present proposed standards to the Board. The Division appropriately carried out its mandate under Labor Code section 147.1 to present to the Board the PEL proposed for TCE in this rulemaking, including a determination of necessity for the proposed amendments. In addition, the Board is carrying out its mandate under Labor Code Section 144.6 to adopt standards dealing with toxic materials that most adequately assure, to the extent feasible, that no employee will suffer material impairment of health or functional capacity, taking into account the latest available scientific evidence in the field and the reasonableness of the standard.

SECTIONS AFFECTED

Following is the specific section of Title 8 affected by this proposed action:

POLICY STATEMENT OVERVIEW

ANTICIPATED BENEFITS OF THE PROPOSED ACTION

The Board estimates that an average of 9.76 employees is employed at each of the 367 affected businesses, for a total of 3,582 employees.

At the current PEL, TCE exposure could result in cancer for 380 workers employed in the 367 businesses affected by the proposal.

Assuming that all 3,582 workers employed by these 367 businesses are exposed to TCE at (or above) the existing PEL of 25 ppm under the conditions prescribed by CCR title 27 section 25721, these workers would be expected to experience 380 cancer cases attributable to TCE. Treating these 380 cases comes to a total cost of \$68,700,000 in direct medical costs. Because TCE is capable of causing various cancers within ten years or less, and the timeline of the proposed regulation is projected at 10 years, this comes to approximately \$6.87 million per year over ten years.

The proposed TCE PEL reduction could avoid 376 of these cancer cases, saving approximately \$68,000,000 over ten years.

Because the proposed PEL of 0.24 ppm would be expected to result in one cancer per 1,000 workers, these 3,582 workers would be expected to experience four cancer cases over this ten-year time period. This avoids 376 cancer cases that would otherwise occur at the current PEL. The cost of treating these four cases is about \$700,000 over 10 years, or \$70,000 per year.

These estimates do not include indirect costs, such as lost wages and benefits, lost productivity and opportunity, private purchases of medical supplies, in-home support services, care provided by family members, insurance co-pays and other costs associated with caring for an individual with a serious illness.

TCE is also a well-recognized environmental and public health hazard.

In addition to its effects on the health of workers, TCE is a well-recognized environmental and public health hazard. The ARB has designated TCE as a toxic air contaminant (TAC); OEHHA lists it as a known carcinogen and reproductive toxicant for purposes of the public warning provisions of Proposition 65; U.S. EPA has found TCE in at least 1,051 (57%) of 1,854 current or former superfund sites on the National Priorities List, which are the nation's most serious hazardous waste sites. TCE persists in groundwater and diffuses into air spaces beneath buildings and enters indoor air (a process known as vapor intrusion) such that occupants—including children and other vulnerable members of the population—can be exposed. In light of the many health hazards associated with TCE, any reduction in its use in industrial processes or in consumer and commercial products will benefit public and environmental health, in addition to benefiting the health and safety of workers.

EVALUATION OF INCONSISTENCY/INCOMPATIBILITY WITH EXISTING STATE REGULATIONS

The Board evaluated the proposed regulation pursuant to Government Code section 11346.5(a)(3)(D) and has determined that it is not inconsistent or incompatible with existing state regulations. The proposal is part of a system of occupational safety and health regulations. The consistency and compatibility of that system's component regulations is provided by: (1) the requirement of the federal government and the Labor Code to the effect that state regulations be at least as effective as their federal counterparts, and (2) the requirement that all state occupational safety and health rulemaking be channeled through the Board.

SMALL BUSINESS IMPACT STATEMENT

The Board has determined that the proposed regulatory action would affect small businesses, although the anticipated impact is limited, as explained below.

Data from the Cal/EPA California Environmental Reporting System (CERS) provided to CDPH in December 2024 shows that 367 businesses use TCE and therefore affected by the proposal. (See further information on CERS below under Business Impact).

CERS does not distinguish between large and small establishments; however, statewide across all industry sectors, small businesses with 100 or fewer employees make up 99% of businesses.¹ As such, 1,848,921 (99%) of California's 1,867,597 businesses are small businesses, as of the second quarter of 2024, and 363 (99%) of the 367 businesses that reported using TCE in 2024 are small businesses. This constitutes 0.02% of the state's small businesses; 99.08% of small businesses are unaffected by the proposal

In addition, because safer alternatives to TCE are available for most applications, it will be relatively uncomplicated for most small businesses to comply with the proposed TCE PEL reduction by switching to safer chemical alternatives or processes. For example, 207 (56%) of the 367 affected businesses are in auto repair businesses, which represents about 2% of the nearly 20,000 auto repair facilities statewide. 98% of these facilities previously relied heavily on TCE for cleaning and degreasing tasks but have since identified and implemented functional (and ideally, safer) alternatives to TCE, as of December 2024.

¹ Gov. Code 11346.3 (b) (4). See California Employment Development Department (EDD) (2024). Size of Business Data for California (Quarterly). Payroll and Number of Businesses by Size of Business – Classified by Industry (Table 2A) – 2024, Qtr 2. Total businesses at line 10 (Total All Industries) in Table 2A are 1,867,597. Total small businesses with 99 or fewer employees (1,841,716) is derived by adding columns E through I. Total large businesses with 100 or more employees (25,881) is derived by adding columns J through M. Percent small businesses is derived using $1,841,716 / 1,867,597 = 99\%$. <https://labormarketinfo.edd.ca.gov/LMID/Size-Data-for-CA-Quarterly.html>. Accessed May 2025.

If the remaining other small businesses are unable to find safer alternatives to TCE, they will likely need additional local exhaust ventilation controls to meet the reduced PEL; these can be relatively expensive but are not prohibitive. The Board therefore concluded that the vast majority of small businesses in California will not be adversely affected by the proposed regulatory action.

DISCLOSURES REGARDING THE PROPOSED ACTION

- Mandate on local agencies and school districts: NONE
- Costs or savings to any state agencies: NONE
- Costs or savings to local agencies or school districts, which must be reimbursed in accordance with Part 7 (commencing with Section 17500) of Division 4 of the Government Code: NONE
- Other nondiscretionary costs or savings imposed on local agencies: NONE
- Costs or savings in federal funding to the state: NONE
- Costs to housing: NONE

BUSINESS IMPACT

The Board has determined that the proposed reduction in the TCE PEL will have no significant adverse economic impact on California businesses or individuals, nor will it affect the ability of businesses to create new business or expand business in California, or compete with businesses in other states. It will not affect the creation or elimination of jobs in California. The Board reached this conclusion based on the finding that the proposal affects 367 businesses, or 0.02% of the 1,867,597 businesses operating in the state as of the second quarter of 2024. This is the latest quarter for which data were available at the time of the Board's analysis.

Under the California Environmental Reporting System (CERS), California businesses must submit annual reports to Cal/EPA if they store or handle hazardous materials, or manage underground or aboveground storage tanks, or generate hazardous waste.

As of December 2024, Cal/EPA showed that 320,061 businesses in California (17%) reported to CERS. Of these, 142,639 (45%) are classified by Cal/EPA as "Chemical Storage Facilities," meaning that they use or handle a "hazardous material," which is defined under Health and Safety Code section 25501 as a chemical for which the "quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment." This definition applies to any chemical for which the producer reports health or environmental hazard data on the Safety Data Sheet (SDS). The minimum reporting threshold is 55 gallons for hazardous materials. In addition, businesses are required to report the presence of any amount of "extremely hazard substances," as defined in CFR title 40, Part 355, Appendices A and B.

Cal/EPA reported to HESIS that as of December 2024, 367 businesses in the CERS database reported using or handling TCE. These businesses and their percentages among the 367 are automotive repair, dealership, body and paint (56%); education/R&D (20%); manufacturing (8%); remediation (4%); electric power distribution (3%);

warehouse/wholesalers (2%); and other (6%). This represents 0.02% of California's 1,867,597 businesses, as of the second quarter of 2024. On account of its well-established toxicity, and in response to local and state government regulations and initiatives, 99.98% of California businesses no longer handle, store or otherwise work with TCE.

The costs of the proposal among the 367 affected businesses are felt primarily in the first year of implementation.

The Board estimates that the proposed TCE PEL reduction will cost each of the 367 affected businesses an average of \$15,000 in the first year of the proposal and \$500 per year in each of the subsequent nine years, for a total ten-year cost of \$19,500 per business. For all 367 businesses, this comes to a 10-year total cost of \$7,156,500.

Under a "most costly" scenario, the Board estimates that the proposal could cost each business \$20,000 in the first year and \$1,000 each of the subsequent nine years, for a total ten-year cost of \$29,000 per business. For all 367 businesses, this comes to a total ten-year cost of \$10,643,000.

Ambient levels of TCE measured in urban air confirm the limited use of TCE in California. While the CERS data indicates that only 367 businesses reported using TCE in 2024, the limited use of TCE in California is also apparent in data reported by the California Air Resources Board (ARB) from ambient air monitoring stations located in urban areas of the state. From 1989 to the most recent data reported in 2024, the mean statewide ambient TCE air concentration declined 95%, from 0.183 ppb to 0.010 ppb, below the detection limit of 0.020 ppb. Air concentrations of TCE have remained below the limit of detection since 2006. ARB's emissions data illustrates that since 1989, industrial and commercial uses of TCE have declined substantially, reflecting reduced usage statewide.

COST IMPACT ON REPRESENTATIVE PRIVATE PERSON OR BUSINESS

The 367 businesses affected by this rulemaking will take one of two possible approaches in complying with the proposal:

- Approach (1): Identify an alternative to TCE, which will primarily involve administrative costs to assess the efficacy of the alternative(s), or;
- Approach (2): Continue using TCE, which will likely require additional local exhaust ventilation systems to maintain TCE exposure level below the proposed PEL of 0.24 ppm.

Approach #1 would require about \$10,000 in administrative costs per business in the first year of the proposed PEL reduction, and no additional costs each year over the subsequent nine years, for a total ten-year cost per business of \$10,000.

Approach #2 would cost up to \$20,000 per business in the first year and \$1,000 each year over the subsequent nine years for maintenance and cleaning, for a total ten-year cost per business of \$29,000. These estimates are based on the mid-point price for the installation and maintenance of local exhaust ventilation systems.

Assuming that the 367 affected businesses choose approach #1 or approach #2 in equal measure, the mid-point cost estimates per business are \$15,000 in the first year of the proposal and \$500 per year in each of the subsequent nine years, for a total ten-year cost of \$19,500 per business. For all 367 businesses, this comes to a 10-year total cost of \$7,156,500.

In the Board's analysis, assuming that businesses will select approach #1 or approach #2 in equal measure is reasonable because 56% (207) of the 367 affected businesses are in automotive repair, auto dealerships and auto body and paint, where alternatives to TCE have already been implemented by about 19,800 such facilities statewide, as of December 2024. The affected facilities represent about 2% of the nearly 20,000 auto repair facilities statewide, which previously relied heavily on TCE for cleaning and degreasing tasks. This 2% of facilities will therefore most likely choose approach #1 and simply select an alternative to TCE.

The remaining 160 (44%) affected facilities might be less able to take this approach; some would need to take the more costly approach #2.

However, even if all 367 businesses selected the more costly approach #2 (incurring an initial expense of \$20,000 in the first year and \$1,000 each year over the following nine years) the total cost over ten years of the proposal, per business, would be \$29,000, and the total ten-year cost for all 367 businesses would be \$10,643,000.

Upstream businesses that produce or import TCE, and manufacturers of products that contain TCE, are unlikely to be affected by the proposal. EPA national databases show there are 16 U.S. businesses that manufacture or import TCE and eight U.S. businesses that use TCE in commercial formulations. While these databases are not necessarily a complete inventory of businesses, of those listed, only one product manufacturer that uses TCE is shown as operating in California.

As noted above, the use of TCE has declined substantially in California in the wake of numerous regulatory actions; it will continue to do so if U.S. EPA is successful in defending its proposed prohibition on the use of TCE under the Toxic Substances Control Act (TSCA), which went into effect in September 2025 but is now under judicial review. Since many manufacturers already produce TCE-free alternatives, the proposed TCE PEL reduction to 0.24 ppm and the transition away from TCE into alternatives by California employers are aligned with this upstream effort occurring on a national level.

RESULTS OF THE ECONOMIC IMPACT ANALYSIS/BUSINESS IMPACT

The Board has determined the following:

(1) The proposal will not affect the creation or elimination of jobs within California.

If facilities using TCE switch to alternatives products, this may create some business opportunities for California-based companies that manufacture or distribute these alternatives; however, because only 0.6% of facilities reported using TCE in 2019 under

the California Environmental Reporting System (CERS), this effect will be small. Therefore the Board concludes that the rulemaking will have a negligible effect on the creation or elimination of jobs. Businesses that choose to continue using TCE-based commercial products will need to provide effective protections for workers; this activity, however, will not create or eliminate jobs within the state.

(2) The proposal will not affect the creation of new businesses or elimination of existing businesses within California.

Because only 0.6% of facilities reported using TCE in 2019, and those businesses are likely to switch to alternatives to TCE, the rulemaking will have a negligible effect on the creation of new businesses or the elimination of existing businesses. If TCE users switch to alternatives to TCE, this may create some business opportunity for California-based companies that manufacture or distribute these alternatives; however, because TCE users represent only 0.6% of facilities, this stimulus effect will be negligible. Businesses that choose to continue using TCE-based products will need to provide effective protections for workers; this activity, however, will not lead to the creation of new businesses or the elimination of existing businesses within the state.

(3) The proposal will not affect the expansion of businesses currently doing business within the state.

Due to restrictions on TCE air emissions by the California Air Resources Board, manufacturers and purveyors of TCE-containing products are likely to be located outside of California. To the extent that this rulemaking compels California businesses to seek alternatives to TCE, businesses providing these alternatives that are based in California may see an expansion of business; however, because only 0.6% of facilities reported using TCE in 2019, this expansion would be negligible.

In addition, alongside the potential costs to 367 businesses noted above, the Board estimates that the proposal could avoid \$68,000,000 for treatment of cancers attributable to TCE exposure at the existing TCE PEL. In the Board's analysis, the existing PEL could result in 380 cases of cancer among the 3,582 workers employed by the 367 businesses, at a total cost of \$68,700,000. The proposed PEL reduction is likely to result in four cancer cases among these 3,582 workers over ten years, at a total cost of \$700,000. By avoiding 376 cancer cases, the proposal avoids \$68,000,000 in direct medical costs.

This estimate does not include indirect costs, such as lost wages and benefits, lost productivity and opportunity, private purchases of medical supplies, in-home support services, care provided by family members, insurance co-pays and other costs associated with caring for an individual with a serious illness.

To reach this conclusion, the Board applied the OEHHA cancer risk assessment methodology to derive the proposed 8-hour PEL for TCE of 0.24 ppm (1.3 mg/m³). Under this methodology, the Division applied OEHHA's most recent 2012 cancer unit

risk level (URL) for TCE of $4.0 \times 10^{-3} \text{ (mg/m}^3\text{)}^{-1}$ using the risk assessment parameters for occupational exposures prescribed under CCR title 27, section 25721.

Based on this analysis, the Board estimated that occupational exposure to TCE at the existing PEL of 25 ppm would be expected to result in 106 additional cases of cancer for every 1,000 workers who are exposed under the conditions prescribed in section CCR title 27 section 25721. This is more than 100 times over the Board's 1:1000 health risk threshold for PELs. This comes to 380 cancer cases for the 3,582 workers in the 367 businesses affected by the proposal.

Reducing the TCE PEL to 0.24 ppm would be expected to result in one case of cancer for every 1,000 workers who are exposed at 0.24 ppm under the conditions prescribed in section CCR title 27 section 25721. This comes to four cancer cases among the population of 3,582 workers in the 367 affected businesses. The proposal therefore has the potential to avoid 376 cases of cancer among this group of workers.

ASSESSMENT OF JOB/BUSINESS CREATION OR ELIMINATION

The Board has determined that, because the proposal affects only 367 businesses, or 0.02% of businesses operating in the state, it will not have a significant impact on the creation or elimination of jobs, nor will it affect the ability of businesses to create or expand business in California or compete with businesses in other states.

In addition, because safer alternatives to TCE are available for most applications, it will be relatively uncomplicated for small businesses to comply with the proposed TCE PEL reduction by switching to safer chemical alternatives or processes. Those small businesses that must continue using TCE will likely need additional local exhaust ventilation controls to meet the reduced PEL; these can be relatively expensive but are not prohibitive. The Board has therefore determined that the vast majority of businesses in California will not be adversely affected by the proposal. Because these changes are relatively simple and low cost, the Board has determined that this will not in any significant way lead to businesses closing or the elimination of existing businesses.

CONSIDERATION OF ALTERNATIVES

In accordance with Government Code Section 11346.5(a)(13), the Board must determine that no reasonable alternative it considered to the regulation or that has otherwise been identified and brought to its attention would either be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law than the proposal described in this Notice.

The Board considered the alternative of reducing the PEL for TCE to a level halfway between 0.24 ppm and 25 ppm, or 12.5 ppm. Assuming a linear association between exposure and disease, this could result in half the number of expected cancers (190 cases) among the 3,582 affected workers, compared to the cancer rate at the existing

PEL (380 cases), along with about half of the \$68,000,000 in direct medical costs avoided, or \$34,000,000.

It is likely, however, that this alternative would still require employers to identify an alternative to TCE (Approach #1, above) or implement engineering controls to protect workers from TCE exposure under a revised PEL of 12.5 ppm (Approach #2, above), so the 367 businesses would still need to invest the estimated cost of \$7,156,500 over the 10-year time period. Alternative 1 is therefore equally costly for employers compared to the proposed regulation, but it results in only a 50% reduction in cancer cases and costs. As a result, this alternative does not sufficiently protect workers from a known carcinogen and is inconsistent with Labor Code sections 144.6 and 147.1. For these reasons, the Board rejected this alternative.

The Board invites interested persons to present statements or arguments with respect to alternatives to the proposed regulation at the scheduled public hearing or during the written comment period.

AVAILABILITY OF DOCUMENTS AND CONTACT PERSON

The Board has prepared an Initial Statement of Reasons for the proposed regulatory action and has available all the information upon which the proposal is based. Copies of the exact language of the proposed regulations, the Initial Statement of Reasons, the rulemaking file, the Final Statement of Reasons (when available) and other information, if any, may be obtained upon request from at the following location or from the contact people listed below:

Department of Industrial Relations
Occupational Safety and Health Standards Board
2520 Venture Oaks Way, STE. 350
Sacramento, CA 95833

In addition, the Notice of Purposed Action, the exact language of the proposed regulations, and the Initial Statement of Reasons may be found on the Board's website at the following address: <https://www.dir.ca.gov/oshsb/>

Any substantial changes made to this proposal will be available for at least 15 days prior to the Board's adoption of this proposal.

Questions regarding the regulatory process or clarification on the substance of this regulatory proposal may be directed to:

Darus Wise, Regulatory Analyst
Telephone: (916) 274-5721 / Email: oshsbulemaking@dir.ca.gov

Kevin Goddard, Principal Safety Engineer
Telephone: (916) 759-6481 / Email: kgoddard@dir.ca.gov