SENATE COMMITTEE ON APPROPRIATIONS
Senator Anna Caballero, Chair
2023 - 2024 Regular Session

AB 2408 (Haney) - Firefighter personal protective equipment: perfluoroalkyl and polyfluoroalkyl substances

Version: May 16, 2024
Urgency: No
Hearing Date: August 5, 2024

Policy Vote: E.Q. 7 - 0, L., P.E. & R. 5 - 0
Mandate: No
Consultant: Ashley Ames

Bill Summary: This bill would prohibit manufacture, sale, distribution, or purchase of any firefighter personal protective equipment (PPE) containing intentionally added per- and poly-fluoroalkyl substance (PFAS) chemicals, as provided, and would require that the California Occupational Safety and Health Standards Board (OSHSB) update its standards to include PFAS-free turnout gear.

Fiscal Impact:

- The California Department of Forestry and Fire Protection (CalFire) estimates one-time costs of $94 million (General Fund) to replace its current supply of structural turnouts given the ambiguity of on the future use (rather than manufacture, sale, etc.) of PPE with intentionally added PFAS. CalFire notes there is not currently a PFAS-free product that could replace its structural turnout gear.
- Unknown but potentially significant cost pressures (Trial Court Trust Fund and General Fund) to the courts for adjudication of enforcement actions filed by public prosecutors. This bill would authorize specified public prosecutors to enforce violations of the bill's prohibition on the sale and use of PPE containing PFAS. Actual costs would depend on the number of violations that result in cases filed. In general, it costs approximately $1,000 to operate a courtroom for one hour. If 10 cases are filed statewide and each requires two days of court time to resolve, the resulting trial court workload would cost about $160,000. Although courts are not funded on the basis of workload, increased pressure on the Trial Court Trust Fund may create a need for increased funding for courts from the General Fund. The Governor's 2024-25 budget proposes $83.1 million ongoing from the General Fund to backfill declining revenue to the Trial Court Trust Fund.

Background: With a high chance for exposure and substantial hazard traits, PFAS pose high risks for human, environmental, and animal health. PFAS exposure occurs mainly through ingestion of contaminated food or liquids. Exposure can also occur through inhalation of indoor air or contact with contaminated media. PFAS can be transferred from mother to child during pregnancy and breastfeeding. PFAS remains in the body for a long time, so as people continue to be exposed to PFAS, the PFAS levels in their bodies may accumulate.

According to the Department of Toxic Substances Control (DTSC), all PFAS display at least one of the hazard traits identified in California's Safer Consumer Products (Green Chemistry) Hazard Traits Regulations. Several PFAS bioaccumulate significantly in animals or plants and emerging evidence points to their phytotoxicity, aquatic toxicity, and terrestrial ecotoxicity. DTSC also contends that exposure to PFAS can lead to

adverse health outcomes in humans. According to the U.S. EPA, current peer-reviewed scientific studies have shown that exposure to certain levels of PFAS may lead to reproductive effects such as decreased fertility or increased high blood pressure in pregnant women; developmental effects or delays in children, including low birth weight, accelerated puberty, bone variations, or behavioral changes; increased risk of some cancers, including prostate, kidney, and testicular cancers; reduced ability of the body's immune system to fight infections, including reduced vaccine response; interference with the body's natural hormones; and, increased cholesterol levels and/or risk of obesity. PFAS can cause these health harms at extremely low levels; California and the EPA warn of the health harms for some PFAS in the parts per trillion range (the equivalent of one drop of water in 20 Olympic-sized swimming pools).

Firefighter exposure to PFAS. Elevated levels of PFAS chemicals have been documented in the bodies of firefighters, with evidence suggesting that the exposures are occupationally related. The Firefighter Occupational Exposures Project, a study of environmental chemical exposures in firefighters as part of Biomonitoring California, found that concentrations of a particular perfluorinated chemical were approximately three times higher in the firefighters tested than in adult males participating in the National Health and Nutrition Examination Survey (NHANES).

There are numerous potential PFAS exposure pathways for firefighters that have been documented in scientific studies, including from aqueous film-forming foams (which was restricted in California in 2022 with the chaptering of SB 1044, Allen), and firefighter personal protective equipment (PPE). Firefighter PPE, or "turnout gear" has three layers: the thermal layer closest to the skin, a moisture barrier for water resistance, and the outer shell. There are several scientific studies documenting the presence of numerous PFAS substances in the jacket and pants of firefighter PPE. These studies show that fluorochemicals can be shed from the textiles during the in-service lifetime of the garment, serving as an exposure route for firefighters to these chemicals.

The National Fire Protection Association (NFPA) Standard. The NFPA is a nonprofit organization that publishes standards related to fire safety, including product safety standards for firefighter PPE. The NFPA standard, NFPA 1971 Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, sets the minimum levels of protection from thermal, physical, environmental, and bloodborne pathogen hazards. The NFPA 1971 standard is currently being updated and consolidated with other NFPA standards, with a final version likely to be adopted in 2024.

The functional use of PFAS in firefighter turnout gear. PFAS is mainly concentrated in the pants and jackets of turnouts within the inner moisture barrier layer. Currently, the NFPA Standard requires that firefighter PPE meet a 48-hour ultraviolet (UV) light degradation resistance test that, to date, can only be met with the addition of PFAS materials. However, given that the materials inside the fabric of firefighter turnout gear are never exposed to direct sunlight, the upcoming revision of the NPFA standard proposes removing the UV light test. The revision to the NFPA standard also proposes to add restrictions on PFAS substances in turnout gear (as of the writing of this analysis, the draft standard restricts total organic fluorine content to 10 ppm) and establishes a labeling standard for PFAS-free turnout.

This bill would bring California into conformance with the new federal standard once approved, by banning PFAS from being used in firefighter gear and directing the OSHSB to revise its regulations to meet the latest safety standard within a year after it has been updated.

Proposed Law: This bill would prohibit any firefighter PPE containing intentionally added PFAS and require that the OSHSB update its standards to include PFAS-free turnout gear. Specifically, it would:

1) Make findings and declarations related to the toxic and carcinogenic nature of PFAS and the risk of exposure to PFAS and other chemicals from the firefighting profession.

2) Prohibit, commencing July 1, 2026, any person from manufacturing knowingly selling, offering/distributing for sale or use in California, or purchasing or accepting for future use, any firefighter PPE containing intentionally added PFAS chemicals.

3) Require the Occupational Safety and Health Standards Board, within 1 year of the NFPA updating the NFPA 1971 Standard for firefighter PPE to include PFAS-free turnout gear, to update the applicable safety orders, or other standards or regulations, to maintain alignment with the NFPA standard

Related Legislation:

SB 1044 (Allen, Chapter 308, Statutes of 2020) prohibits the manufacture, sale, distribution, and use of class B firefighting foam containing PFAS chemicals by January 1, 2022, with some exceptions. Requires notification of the presence of PFAS in the protective equipment of firefighters.

AB 2146 (Skinner, Chapter 811, Statutes of 2014) requires the Occupational Safety and Health Standards Board, every five years, to complete a comprehensive review of all revisions to the National Fire Protection Association (NFPA) standards pertaining to firefighter PPE and maintain alignment with the NFPA safety orders.

Staff Comments: In order to eliminate use of PPE with intentionally added PFAS, CalFire would need to replace all its existing structural turnout gear with a PFAS-free alternative—assuming one is available by that time. Currently, there are approximately 9,400 firefighters at CalFire's peak-staffing, each of whom are issued two sets of turnouts to ensure having appropriate PPE for job requirements. According to CalFIre, this bill could require replacement of all 18,800 sets of turnouts in a short period of time.

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