

at 29 CFR 1910.1200, and the preambles to any of the Agency's substance-specific standards codified at 29 CFR 1910.1001 to 1910.1052). When OSHA promulgates a new or revised PEL for a chemical air contaminant, (e.g., Arsenic, 29 CFR 1910.1018; Asbestos, 29 CFR 1910.1001; Benzene, 29 CFR 1910.1028; Lead, 29 CFR 1910.1025; Ethylene Oxide, 29 CFR 1910.1047), it determines at what level of exposure to the contaminant employees develop serious health effects (e.g., exposure to the contaminant is life-threatening, causes permanent damage, or significantly impairs employees' ability to perform their jobs safely).

As discussed in Section VI, "Summary of the Final Economic Analysis," of the final Respiratory Protection Standard (63 FR 1171), OSHA estimated that improvements and clarifications made to the previous Respiratory Protection Standard would prevent, each year, between 843 and 9,282 (best estimate, 4,046) work-related injuries and illnesses, and between 351 and 1,626 (best estimate, 932) work-related deaths from cancer and chronic diseases such as cardiovascular disease. To support this estimate, OSHA used its Integrated Management Information System database to identify several substances that had a wide range of adverse effects, as well as documented workplace exposures that exceeded the PELs for these substances. The health effects associated with exposure to these substances include:

- Sudden death or asphyxiation (e.g., from exposure to carbon monoxide, carbon dioxide);
- Loss of lung function (e.g., from exposure to wood dust, welding fumes, manganese fumes, copper fumes, cobalt metal fumes, silica);
- Central nervous system disturbances (e.g., from exposure to carbon monoxide, trichloroethylene);
- Cancer (e.g., from exposure to chromic acid, wood dust, silica); and
- Cardiovascular problems (e.g., from exposure to carbon monoxide).

Furthermore, most of the airborne contaminants measured as part of the workplace protection factor studies considered during development of this proposal cause serious health effects. For example, acute lung, skin, and eye irritation occur as a result of occupational exposures to styrene, lead, strontium, benzo(a)pyrene, and silica. Longer-term exposures to other substances sampled in these studies cause bone and blood effects (lead particulates), neurological effects (mercury fumes), chronic lung damage (cotton dust), and cancer (asbestos fibers and chromium particulates).

The risk that an employee will experience an adverse health outcome while exposed to a hazardous airborne substance is a function of the toxicity or hazardous characteristics of the substance, the concentrations of the substance in the air, the duration of exposure, the physiology of the employee, and workplace conditions. These factors combined assist in determination of the type of respirator selected to reduce an employee's exposure below the PEL for the hazardous substance. Under many workplace-exposure conditions, prevention of serious health effects depends substantially on the protection afforded to employees by a respirator.

Employers need the APFs provided in this proposal to select appropriate respirators for employee use when engineering and work-practice controls are insufficient to maintain hazardous substances at safe levels in the workplace. In this regard, the proposed APFs will permit employers to select respirators for employee protection based on the type of hazardous substance and the level of employee exposure to that substance, among other factors. OSHA strongly believes that proper respirator selection using the proposed APFs will protect employees from overexposure to hazardous substances, thus preventing the serious health effects that result from such overexposure.

While APFs are an important factor in respirator selection, employers must consider other factors as well. In this regard, simply applying an APF to the level of an airborne contaminant in a workplace will not ensure that employees receive adequate protection. Throughout the preamble of the final Respiratory Protection Standard, OSHA demonstrated that adequate fit testing, proper respirator use, employee training, and thorough inspection and maintenance of respirators are some of the other factors essential to an effective respiratory protection program. The Agency believes that failure to comply with any of these program requirements substantially increases the chance that the respirator selected by the employer will not protect employees against hazardous air contaminants because of respirator malfunction, excessive leakage, improper use, or some combination of these problems. Therefore, employers should expect respirators to provide effective employee protection against the serious health effects of hazardous airborne substances only when they use the respirators in the context of a comprehensive respiratory protection program. If respirators are to provide

employees with at least the minimum level of exposure protection listed in the proposed APF table, employers must comply with the other respiratory protection requirements specified under OSHA's Respiratory Protection Standard at 29 CFR 1910.134.

In this rulemaking, OSHA also is proposing to supersede the existing APF requirements in its substance-specific standards. By superceding these requirements, the Agency expects that the benefits estimated for the proposed APFs under the Respiratory Protection Standard would be available to employers who must select respirators for employee use under the substance-specific standards. In addition, OSHA would be harmonizing the APF requirements in the substance-specific standards with the APF requirements proposed for its Respiratory Protection Standard. The Agency believes that harmonization would reduce confusion among the regulated community and aid in uniform application of APFs, while maintaining employee protection at levels at least as protective as the existing APF requirements.

VI. Summary of the Preliminary Economic and Regulatory Flexibility Screening Analysis

A. Introduction

OSHA's Preliminary Economic and Regulatory Flexibility Screening Analysis (PERFSA) addresses issues related to the costs, benefits, technological and economic feasibility, and economic impacts (including small business impacts) of the Agency's proposed Assigned Protection Factors (APF) rule. The Agency preliminarily determined that this rule is not an economically significant rule under Executive Order 12866. The economic analysis meets the requirements of both Executive Order 12866 and the Regulatory Flexibility Act (RFA; as amended in 1996). The PERFSA presents OSHA's full economic analysis and methodology. The Agency entered the complete PERFSA into the docket as Exhibit 6-1. The remainder of this section summarizes the results of that analysis.

The purpose of this PERFSA is to:

- Identify the establishments and industries potentially affected by the rule;
- Evaluate the costs employers would incur to meet the requirements of proposed APF rule;
- Estimate the benefits of the rule;
- Assess the economic feasibility of the rule for affected industries; and
- Determine the impacts of the rule on small entities and the need for a Regulatory Flexibility Analysis.