

**SUPPORTING STATEMENT FOR  
THE INFORMATION COLLECTION REQUIREMENTS  
IN THE PROPOSAL TO REVOKE THEBERYLLIUM STANDARDS FOR SHIPYARDS  
(29 CFR 1915.1024) AND CONSTRUCTION (29 CFR 1926.1124) AND RETAIN THE  
BERYLLIUM STANDARD FOR  
GENERAL INDUSTRY (29 CFR 1910.1024) <sup>[1]</sup>  
OMB CONTROL NO. 1218-0267 (June 2017)**

This Information Collection Request (ICR) is being submitted in association with a Notice of Proposed Rulemaking in order to allow the public and OMB to review and to comment on the revised collections of information. The Department asks that OMB conclude its review by filing a comment asking the agency to consider public comments on the information collections and resubmit the ICR at the final rule stage.

## **A. JUSTIFICATION**

**1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.**

The main objective of the Occupational Safety and Health Act (“OSH Act” or “Act”) is to “assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources” (29 U.S.C. 651(a)). To achieve this objective, the OSH Act specifically authorizes “the development and promulgation of occupational safety and health standards” (29 U.S.C. 651(b)(9)). The Act further states that “[t]he Secretary . . . shall . . . prescribe such rules and regulations as [he/she] may deem necessary to carry out [his/her] responsibilities under this Act, including rules and regulations dealing with the inspection of an employer’s establishment” (29 U.S.C. 657(g)(2)).

To protect worker health, the OSH Act authorizes the Secretary of Labor (Secretary) to develop standards that provide for “monitoring or measuring employee exposure” to occupational hazards and “prescribe the type and frequency of medical examinations or other tests which shall be made available, by the employer or at [the employer’s] cost, to employees exposed to such hazards in order to most effectively determine whether the health of such employees is adversely affected by such exposure” (29 U.S.C. 655(b)(7)). Moreover, the Act directs the Secretary to “issue regulations requiring employers to maintain accurate records of employee exposures to potentially toxic materials or harmful physical agents which are required to be monitored or measured,” and further requires that such regulations provide “for each employee or former employee to have access to such records as will indicate [the employee’s] own exposure to toxic

---

<sup>[1][1]</sup>The purpose of this Supporting Statement is to analyze and describe the burden hours and costs associated with provisions of the proposed standard that contain collections of information (paperwork) requirements; this Supporting Statement does not provide information or guidance on how to comply with, or how to enforce, these provisions.

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

materials or harmful physical agents” as appropriate (29 U.S.C. 657(c)(3)). In addition, the OSH Act mandates that “[e]ach employer shall make, keep and preserve, and make available to the Secretary . . . such records regarding [his/her] activities relating to this Act as the Secretary . . . may prescribe by regulation as necessary or appropriate for the enforcement of this Act or for developing information regarding the causes and prevention of occupational accidents and illnesses” (29 U.S.C. 657(c)(1)).

Section 6(b)(7) of the Act, 29 U.S.C. 655(b)(7), further specifies that “[a]ny standard promulgated under this subsection shall prescribe the use of labels or other appropriate forms of warning as are necessary to insure that employees are apprised of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure.”

Under the authority granted by the OSH Act, the Secretary, through the Occupational Safety and Health Administration (“OSHA” or “the Agency is issuing a proposal to revoke the comprehensive standards for shipyards and construction regulating occupational exposure to beryllium and beryllium compounds (29 CFR 1915.1024 and 29 CFR 1926.1124, respectively), while maintaining the Beryllium standard for general industry (29 CFR 1910.1024).

**2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.**

OSHA is proposing to revoke the two comprehensive standards applicable to the construction and shipyard sectors, but to retain the new lower PEL of 0.2 µg/m<sup>3</sup> and the STEL of 2.0 µg/m<sup>3</sup> for those sectors. OSHA reviewed the exposure data for abrasive blasting in construction and shipyards and welding in shipyards and determined that there is a significant risk of chronic beryllium disease (CBD) and lung cancer to workers in construction and shipyards based on the exposure levels observed. Because OSHA has determined that there is significant risk of material impairment of health at the new lower PEL of 0.2 µg/m<sup>3</sup>, the Agency continues to believe that that it is necessary to protect workers exposed at this level. However, OSHA is now reconsidering the need for comprehensive standards in the construction and shipyards sectors. OSHA has evidence that beryllium exposure in these sectors is limited to the following operations: abrasive blasting in construction, abrasive blasting in shipyards, and welding in shipyards. OSHA has a number of standards already applicable to these operations, including ventilation (29 CFR 1926.57), mechanical paint removers (29 CFR 1915.34), and respiratory protection (1910.134). This proposal would remove the following collections of information contained in the two standards:

**Table A – Collections of Information Being Removed**

#	Removing the Collections of Information	
	Maritime Industry	Construction Industry
1	§1915.1024(d)(2) Performance Option	§1926.1124(d)(2) Performance Option

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

2	§1915.1024(d)(3)(i),(ii),& (iii) Scheduled Monitoring Options	§1926.1124(d)(3)(i),(ii),& (iii) Scheduled Monitoring Options
3	§1915.1024(d)(3)(iv),(v),& (vi) Scheduled Monitoring Options	§1926.1124(d)(3)(iv),(v),& (vi) Scheduled Monitoring Options
4	§1915.1024(d)(4) Reassessment of Exposure	§1926.1124(d)(4) Reassessment of Exposure
5	§1915.1024(d)(6)(i)&(ii) Employee Notification of Assessment Results	§1926.1124(d)(6)(i)&(ii) Employee Notification of Assessment Results e
6	§1915.1024(e)(2) Regulated Areas -- Demarcation.	§1926.1124(e)(2) Competent Person.
7	§1915.1024(f)(1)(i),(ii),& (iii) Methods of Compliance—Written Exposure Control Plan	§1926.1124(f)(1)(i),(ii),&(iii) Methods of Compliance—Written Exposure Control Plan.
8	§1915.1024(g) Respiratory Protection Program	§1926.1124(g) Respiratory Protection Program
9	§1915.1024(h)(2)(v) Personal Protective Clothing and Equipment –Removal and Storage	§1926.1124(h)(2)(v) Personal Protective Clothing and Equipment – Removal and Storage
10	§1915.1024(h)(3)(iii) Personal Protective Clothing and Equipment –Cleaning and Replacement	§1926.1124(h)(3)(iii) Personal Protective Clothing and Equipment – Cleaning and Replacement
11	§1915.1024(j)(3) Housekeeping -- Disposal	§1926.1124(j)(3) Housekeeping -- Disposal
12	§1915.1024(k)(1),(2),&(3) Medical Surveillance	§1926.1124(k)(1),(2),&(3) Medical Surveillance
13	§1915.1024(k)(4) Medical Surveillance –Information Provided to the PLHCP	§1926.1124(k)(4) Medical Surveillance–Information Provided to the PLHCP
14	§1915.1024(k)(5)(i),(ii),&(iii) Medical Surveillance –Licensed Physician’s Written Medical Report for the Employee	§1926.1124(k)(5)(i),(ii),&(iii) Medical Surveillance– Licensed Physician’s Written Medical Report for the Employee
15	§1915.1024(k)(6) Medical Surveillance –Licensed Physician’s Written Medical Opinion for the Employer	§1926.1124(k)(6) Medical Surveillance– Licensed Physician’s Written Medical Opinion for the Employer
16	§1915.1024(k)(7) Medical Surveillance –Referral to the CBD Diagnostic Center	§1926.1124(k)(7) Medical Surveillance—Referral to the CBD Diagnostic Center
17	§1915.1024(l)(1) Medical Removal	§1926.1124(l)(1) Medical Removal

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

18	§1915.1024(m)(1) Communication of hazards	§1926.1124(m)(1) Communication of hazards
19	§1915.1024(m)(2) Warning Signs	N/A
20	§1915.1024(m)(3) Warning labels	§1926.1124(m)(3) Warning labels
21	§1915.1024(m)(4)(iv) Employee Information	§1926.1124(m)(4)(iv) Employee Information.
22	§1915.1024(n)(1)(i),(ii),&(iii) Recordkeeping –Air Monitoring Data	§1926.1124(n)(1)(i),(ii),&(iii) Recordkeeping –Air Monitoring Data
23	§1915.1024(n)(2)(i),(ii),&(iii) Recordkeeping –Objective Data	§1926.1124(n)(2)(i),(ii),&(iii) Recordkeeping –Objective Data
24	§1915.1024(n)(3)(i),(ii),&(iii) Recordkeeping –Medical Surveillance	§1926.1124(n)(3)(i),(ii),&(iii) Recordkeeping – Medical Surveillance
25	§1915.1024(n)(4)(i) & (ii) Recordkeeping –Training	§1926.1124(n)(4)(i) & (ii) Recordkeeping – Training

The proposal does not revise the following collections of information that have been approved by OMB.

**§1910.1024 (d) -- Exposure Assessment**

**§1910.1024 (d)(2) Performance Option.**

(2) Performance option. The employer must assess the 8-hour TWA exposure and the 15-minute short-term exposure for each employee on the basis of any combination of air monitoring data and objective data sufficient to accurately characterize airborne exposure to beryllium.

*Purpose:* The availability of exposure data enables physicians or other licensed healthcare professionals (PLHCPs) performing medical examinations on exposed workers to be informed of the extent of an employee’s occupational exposures. Under the performance option, the employer has the option to use any combination of objective data and air monitoring data. Employers do not have to conduct initial exposure monitoring if they rely on objective data that would satisfy the exposure assessment requirements contained in this standard. OSHA takes the burden for the collection of information under the scheduled option paragraph (d)(3).

**§1910.1024 (d)(3)(i), (ii) & (iii) Scheduled Monitoring Option.**

*Initial Monitoring* - §1910.1024 (d)(3)(i), (ii) & (iii).

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

(i) The employer must perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the airborne exposure of employees on each shift, for each job classification, and in each work area.

(ii) The employer must perform initial monitoring to assess the short-term exposure from 15-minute personal breathing zone air samples measured in operations that are likely to produce airborne exposure above the STEL for each work shift, for each job classification, and in each work area.

(iii) Where several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet the requirements of paragraph (d)(3). In representative sampling, the employer must sample the employee(s) expected to have the highest airborne exposure to beryllium.

*Purpose:* The purpose of initial exposure assessment is to determine the extent and degree of beryllium exposure at the worksite; identification and prevention of employee overexposure; identification of the sources of exposure to beryllium; collection of exposure data so that the employer can select the proper control methods to be used; and evaluation of the effectiveness of those selected methods. Exposure assessment enables employers to meet their legal obligation to ensure that their employees are not exposed to beryllium in excess of the permissible exposure limits and to notify employees of their exposure levels, including any overexposures as required by section 8(c)(3) of the Act (29 U.S.C. § 657(c)(3)). In addition, the availability of exposure data enables physicians or other licensed healthcare professionals (PLHCPs) performing medical examinations to be informed of the extent of an employee's occupational exposures.

*Periodic Monitoring:* §1910.1024 (d)(3)(v), (vi), (vii) & (viii).

(v) Where the most recent exposure monitoring indicates that airborne exposure is at or above the action level but at or below the TWA PEL, the employer must repeat such monitoring within six months of the most recent monitoring.

(vi) Where the most recent exposure monitoring indicates that airborne exposure is above the TWA PEL, the employer must repeat such monitoring within three months of the most recent 8-hour TWA exposure monitoring.

(vii) Where the most recent (non-initial) exposure monitoring indicates that airborne exposure is below the action level, the employer must repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken seven or more days apart, are below the action level, at which time the employer may discontinue 8-hour TWA exposure monitoring for those employees whose exposure is represented by such monitoring, except as otherwise provided in paragraph (d)(4) of this standard.

(viii) Where the most recent exposure monitoring indicates that airborne exposure is above the STEL, the employer must repeat such monitoring within three months of the most recent short-

term exposure monitoring until two consecutive measurements, taken seven or more days apart, are below the STEL, at which time the employer may discontinue short-term exposure monitoring for those employees whose exposure is represented by such monitoring, except as otherwise provided in paragraph (d)(4) of this standard.

*Purpose:* OSHA recognizes that exposures in the workplace may fluctuate. Where initial exposure monitoring demonstrates exposures at or above the action level and at or below the TWA PEL, periodic monitoring helps employers identify changes in the workplace and ensure that workers do not experience exposures that are higher than expected, and facilitates the identification and use of additional control measures where necessary. In addition, periodic monitoring reminds workers and employers of the continued need to protect against the hazards associated with beryllium exposure.

**§1910.1024 (d)(4) -- Reassessment of Exposure.**

(4) The employer must reassess airborne exposure whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional airborne exposure at or above the action level or STEL, or when the employer has any reason to believe that new or additional airborne exposure at or above the action level or STEL has occurred.

*Purpose:* The additional assessments required under this subsection are necessary to ensure that the exposure monitoring accurately represents existing exposure conditions. The exposure information gained from such assessments will enable the employer to take appropriate action to protect exposed workers. On the other hand, additional monitoring is not required simply because a change occurs, if the change could not reasonably be expected to result in new or additional exposures to beryllium.

**§1910.1024 (d)(6)(i) & (ii) Employee Notification of Assessment Results.**

(i) Within 15 working days after completing an exposure assessment in accordance with paragraph (d) of this standard, the employer must notify each employee whose airborne exposure is represented by the assessment of the results of that assessment individually in writing or post the results in an appropriate location that is accessible to each of these employees.

(ii) Whenever an exposure assessment indicates that airborne exposure is above the TWA PEL or STEL, the employer must describe in the written notification the corrective action being taken to reduce airborne exposure to or below the exposure limit(s) exceeded where feasible corrective action exists but had not been implemented when the monitoring was conducted.

*Purpose:* Notifying workers of their exposures allows them to know if the employer is required to make medical surveillance available to them and can permit and encourage them to be more proactive in working safely to control their own exposures through better work practices and more active participation in safety programs. The time allowed for notification is consistent with

the harmonized notification times established for a number of health standards applicable to general industry.

**§1910.1024 (e)(2)(i) & (ii) Demarcation of Beryllium Work Areas and Regulated Areas --**

(2) Demarcation. (i) The employer must identify each beryllium work area through signs or any other methods that adequately establish and inform each employee of the boundaries of each beryllium work area.

(ii) The employer must identify each regulated area in accordance with paragraph (m)(2) of this standard.

*Purpose:* The purpose of a beryllium work area is to inform employees of where a beryllium process or operation can potentially result in airborne exposure, regardless of the exposure level, or dermal contact. The purpose of a regulated area is to ensure that the employer makes workers aware of the presence of beryllium at levels above the PEL, to limit exposure to as few workers as possible, and to remind employees that personal protective equipment (PPE) is required. Establishing a regulated area or written exposure control plan can help to minimize exposure to workers not directly involved in operations that generate beryllium.

The information collections associated with the beryllium work area requirement are performance oriented because the employer may choose how to establish boundaries for each beryllium work area and restrict access.

Paragraph (m)(2) includes a requirement to post a sign regarding the hazards in regulated areas and is addressed with the discussion of paragraph (m) later in this section.

**§1910.1024 (f)(1)(i), (ii), & (iii) -- Methods of Compliance -- Written Exposure Control Plan.**

(i) The employer must establish, implement, and maintain a written exposure control plan, which must contain:

- (A) A list of operations and job titles reasonably expected to involve airborne exposure to or dermal contact with beryllium;
- (B) A list of operations and job titles reasonably expected to involve airborne exposure at or above the action level;
- (C) A list of operations and job titles reasonably expected to involve airborne exposure above the TWA PEL or STEL;
- (D) Procedures for minimizing cross-contamination, including preventing the transfer of beryllium between surfaces, equipment, clothing, materials, and articles within beryllium work areas;
- (E) Procedures for keeping surfaces as free as practicable of beryllium;
- (F) Procedures for minimizing the migration of beryllium from beryllium work areas to other locations within or outside the workplace;

(G) A list of engineering controls, work practices, and respiratory protection required by paragraph (f)(2) of this standard;

(H) A list of personal protective clothing and equipment required by paragraph (h) of this standard; and

(I) Procedures for removing, laundering, storing, cleaning, repairing, and disposing of beryllium-contaminated personal protective clothing and equipment, including respirators.

(ii) The employer must review and evaluate the effectiveness of each written exposure control plan at least annually and update it, as necessary, when:

(A) Any change in production processes, materials, equipment, personnel, work practices, or control methods results, or can reasonably be expected to result, in new or additional airborne exposure to beryllium;

(B) The employer becomes aware that an employee has a beryllium-related health effect or shows signs or symptoms associated with airborne exposure to or dermal contact with beryllium; or

(C) The employer has any reason to believe that new or additional airborne exposure is occurring or will occur.

(iii) The employer must make a copy of the written exposure control plan accessible to each employee who is, or can reasonably be expected to be, exposed to airborne beryllium in accordance with OSHA's Access to Employee Exposure and Medical Records (Records Access) standard (29 CFR 1910.1020(e)).

*Purpose:* The purpose of the written exposure control plan is to help reduce skin contact with beryllium, which can lead to beryllium sensitization, and airborne exposure, which can lead to beryllium sensitization, CBD, and lung cancer, by restricting access to work areas, where necessary, to limit exposures and cross contamination.

#### **§1910.1024 (g)(2) -- Respiratory protection program.**

Where this standard requires an employer to provide respiratory protection, the selection and use of such respiratory protection must be in accordance with the Respiratory Protection standard (29 CFR 1910.134).

*Purpose:* The purpose of this requirement is to ensure that employers establish a standardized procedure for selecting, using, and maintaining respirators for each workplace that requires respirator use. Developing written procedures ensures that employers implement the required respirator program in an effective and reliable manner that addresses the unique characteristics (including chemical hazards) of the workplace.

#### **§1910.1024 (h)(2)(v)-- Personal Protective Clothing and Equipment -- Removal and Storage.**



(v) When personal protective clothing or equipment required by this standard is removed from the workplace for laundering, cleaning, maintenance or disposal, the employer must ensure that personal protective clothing and equipment are stored and transported in sealed bags or other closed containers that are impermeable and are labeled in accordance with paragraph (m)(3) of this standard and the HCS (29 CFR 1910.1200).

*Purpose:* This provision is intended reduce exposure to beryllium for employees handling beryllium-contaminated materials by requiring these materials to be stored in sealed bags or other closed containers, and by informing those handling the containers that they contain beryllium through labels describing the potentially harmful effects of beryllium exposure.

OSHA has determined the labeling requirements in paragraph (m)(3) are not collections of information since the standard provides specific language for the labels. Information originally supplied by the Federal government to employers for the purpose of disclosing information to employees is excluded from the definition of a “collection of information.” (5 CFR 1320.3(c)(2), “Controlling paperwork burden on the public”).

**§1910.1024 (h)(3)(iii) --Personal Protective Clothing and Equipment -- Cleaning and Replacement.**

(3)(iii) The employer must inform in writing the persons or the business entities who launder, clean or repair the personal protective clothing or equipment required by this standard of the potentially harmful effects of airborne exposure to and dermal contact with beryllium and that the personal protective clothing and equipment must be handled in accordance with this standard.

*Purpose:* This provision is intended reduce exposure to beryllium for employees handling beryllium-contaminated materials by providing employers and employees handling these materials the information necessary to protect employees from beryllium exposure.

**§1910.1024 (j)(3)(i), (ii)— Housekeeping — Disposal.**

(3) Disposal. The employer must ensure that:

(i) Materials designated for disposal that contain or are contaminated with beryllium are disposed of in sealed, impermeable enclosures, such as bags or containers, that are labeled in accordance with paragraph (m)(3) of this standard; and

(ii) Materials designated for recycling that contain or are contaminated with beryllium are cleaned to be as free as practicable of surface beryllium contamination and labeled in accordance with paragraph (m)(3) of this standard, or placed in sealed, impermeable enclosures, such as bags or containers, that are labeled in accordance with paragraph (m)(3) of this standard.

*Purpose:* This provision is intended to reduce exposure to beryllium for employees handling beryllium-contaminated materials by requiring these materials to be stored in sealed containers,

and warn employers and employees handling the containers of the potentially harmful effects of the beryllium inside those containers to facilitate proper handling and disposal of that material.

OSHA is not taking burden hours or costs for the housekeeping provisions under Items 12 or 13 of this Supporting Statement. Because paragraph (m)(3) provides specific language for the required warning, they are not collections of information under 5 CFR 1320.3(c)(2) (“Controlling paperwork burden on the public”) and the Agency is exempted from taking burden hours and costs of this provision.

**§1910.1024 (k)(1), (2), and (3) -- Medical Surveillance.**

**(1) General.**

(i) The employer must make medical surveillance required by this paragraph available at no cost to the employee, and at a reasonable time and place, to each employee:

- (A) Who is or is reasonably expected to be exposed at or above the action level for more than 30 days per year;
- (B) Who shows signs or symptoms of CBD or other beryllium-related health effects;
- (C) Who is exposed to beryllium during an emergency; or
- (D) Whose most recent written medical opinion required by paragraph (k)(6) or (k)(7) recommends periodic medical surveillance.

(ii) The employer must ensure that all medical examinations and procedures required by this standard are performed by, or under the direction of, a licensed physician.

**(2) Frequency.**

The employer must provide a medical examination:

(i) Within 30 days after determining that:

- (A) An employee meets the criteria of paragraph (k)(1)(i)(A), unless the employee has received a medical examination, provided in accordance with this standard, within the last two years; or
- (B) An employee meets the criteria of paragraph (k)(1)(i)(B) or (C).

(ii) At least every two years thereafter for each employee who continues to meet the criteria of paragraph (k)(1)(i)(A), (B), or (D) of this standard.

(iii) At the termination of employment for each employee who meets any of the criteria of paragraph (k)(1)(i) of this standard at the time the employee’s employment terminates, unless an examination has been provided in accordance with this standard during the six months prior to the date of termination.

**(3) Contents of examination.**

- (i) The employer must ensure that the PLHCP conducting the examination advises the employee of the risks and benefits of participating in the medical surveillance program and the employee's right to opt out of any or all parts of the medical examination.
- (ii) The employer must ensure that the employee is offered a medical examination that includes:
  - (A) A medical and work history, with emphasis on past and present airborne exposure to or dermal contact with beryllium, smoking history, and any history of respiratory system dysfunction;
  - (B) A physical examination with emphasis on the respiratory system;
  - (C) A physical examination for skin rashes;
  - (D) Pulmonary function tests, performed in accordance with the guidelines established by the American Thoracic Society including forced vital capacity (FVC) and forced expiratory volume in one second (FEV<sub>1</sub>);
  - (E) A standardized BeLPT or equivalent test, upon the first examination and at least every two years thereafter, unless the employee is confirmed positive. If the results of the BeLPT are other than normal, a follow-up BeLPT must be offered within 30 days, unless the employee has been confirmed positive. Samples must be analyzed in a laboratory certified under the College of American Pathologists/Clinical Laboratory Improvement Amendments (CLIA) guidelines to perform the BeLPT.
  - (F) A low dose computed tomography (LDCT) scan, when recommended by the PLHCP after considering the employee's history of exposure to beryllium along with other risk factors, such as smoking history, family medical history, sex, age, and presence of existing lung disease; and
  - (G) Any other test deemed appropriate by the PLHCP.

*Purpose:* The initial medical examination serves to identify workers who have beryllium-related medical diseases or other health problems that additional beryllium exposure may exacerbate. The requirement that employers offer employees a medical examination within 30 days after determining that the employee is or is reasonably expected to be exposed at or above the action level for more than 30 days a year would help employers determine if an employee will be able to work in the job involving beryllium exposure without increased risk of adverse health effects.

The general purposes of the medical surveillance provisions for beryllium include: to determine, when reasonably possible, if an individual worker is at increased risk for adverse health effects with continued exposure to beryllium; to identify beryllium-related adverse health effects for the purpose of taking appropriate intervention measures; and to determine workers' fitness to use personal protective equipment, such as respirators.

The requirement is consistent with Section 6(b)(7) of the OSH Act (29 U.S.C. 655(b)(7)), which requires that, when appropriate, OSHA include medical surveillance programs in its standards to determine whether exposure to the hazard addressed by the standard adversely affects the health of workers.

**§1910.1024 (k)(4) -- Medical Surveillance -- Information Provided to the PLHCP.**

(4) The employer must ensure that the examining PLHCP (and the agreed-upon CBD diagnostic center, if an evaluation is required under paragraph (k)(7) of this standard) has a copy of this standard and must provide the following information, if known:

(i) A description of the employee's former and current duties that relate to the employee's airborne exposure to and dermal contact with beryllium;

(ii) The employee's former and current levels of airborne exposure;

(iii) A description of any personal protective clothing and equipment, including respirators, used by the employee, including when and for how long the employee has used that personal protective clothing and equipment; and

(iv) Information from records of employment-related medical examinations previously provided to the employee, currently within the control of the employer, after obtaining written consent from the employee.

*Purpose:* This information will help the PLHCP and CBD diagnostic center evaluate employees' health as it relates to their assigned duties and fitness to use personal protective equipment, including respirators, when needed. Providing the PLHCP and CBD diagnostic center with exposure monitoring results, as required under paragraph (k)(4)(ii), will assist them in determining if an employee is likely to be at risk of adverse effects from airborne beryllium exposure at work. A well-documented exposure history would also assist the PLCHP in determining if a condition may be related to beryllium exposure.

**§1910.1024 (k)(5)(i), (ii), & (iii) -- Medical Surveillance-- Licensed Physician's Written Medical Report for the Employee.**

(5) The employer must ensure that the employee receives a written medical report from the licensed physician within 45 days of the examination (including any follow-up BeLPT required under paragraph (k)(3)(ii)(E) of this standard) and that the PLHCP explains the results of the examination to the employee. The written medical report must contain:

(i) A statement indicating the results of the medical examination, including the licensed physician's opinion as to whether the employee has

(A) Any detected medical condition, such as CBD or beryllium sensitization (i.e., the employee is confirmed positive, as defined in paragraph (b) of this standard), that may place the employee at increased risk from further airborne exposure, and

(B) Any medical conditions related to airborne exposure that require further evaluation or treatment.

(ii) Any recommendations on:

(A) The employee's use of respirators, protective clothing, or equipment; or

(B) Limitations on the employee's airborne exposure to beryllium.

(iii) If the employee is confirmed positive or diagnosed with CBD or if the licensed physician otherwise deems it appropriate, the written report must also contain a referral for an evaluation at a CBD diagnostic center.

(iv) If the employee is confirmed positive or diagnosed with CBD the written report must also contain a recommendation for continued periodic medical surveillance.

(v) If the employee is confirmed positive or diagnosed with CBD the written report must also contain a recommendation for medical removal from airborne exposure to beryllium, as described in paragraph (l).

Note: The preparation of the report is accounted for under Item 13, cost to the employer for an employee's medical examination.

*Purpose:* The rule requires that only the employee receive a written medical report that includes detailed medical information. By providing the licensed physician's written medical report to employees, those who might be at increased risk of health impairment from airborne beryllium exposure will be able to consider interventions (*i.e.*, health management strategies) with guidance from the licensed physician. Such strategies might include employment choices to limit airborne exposures or to use a respirator for additional protection.

The requirement for a written medical report ensures that the employee receives a record of all findings. Employees would also be able to provide the written medical report to future health care providers.

**§1910.1024 (k)(6) -- Medical Surveillance-- Licensed Physician's Written Medical Opinion for the Employer.**

(i) The employer must obtain a written medical opinion from the licensed physician within 45 days of the medical examination (including any follow-up BeLPT required under paragraph (k)(3)(ii)(E) of this standard). The written medical opinion must contain only the following:

(A) The date of the examination;

(B) A statement that the examination has met the requirements of this standard;

(C) Any recommended limitations on the employee's use of respirators, protective clothing, or equipment; and

(D) A statement that the PLHCP has explained the results of the medical examination to the employee, including any tests conducted, any medical conditions related to airborne exposure that require further evaluation or treatment, and any special provisions for use of personal protective clothing or equipment;

(ii) If the employee provides written authorization, the written opinion must also contain any recommended limitations on the employee's airborne exposure to beryllium.

(iii) If the employee is confirmed positive or diagnosed with CBD or if the licensed physician otherwise deems it appropriate, and the employee provides written authorization, the written opinion must also contain a referral for an evaluation at a CBD diagnostic center.

(iv) If the employee is confirmed positive or diagnosed with CBD and the employee provides written authorization, the written opinion must also contain a recommendation for continued periodic medical surveillance.

(v) If the employee is confirmed positive or diagnosed with CBD and the employee provides written authorization, the written opinion must also contain a recommendation for medical removal from airborne exposure to beryllium, as described in paragraph (l).

(vi) The employer must ensure that each employee receives a copy of the written medical opinion described in paragraph (k)(6) of this standard within 45 days of any medical examination (including any follow-up BeLPT required under paragraph (k)(3)(ii)(E) of this standard) performed for that employee.

*Purpose:* The written medical opinion contains information that allows employers to protect employee health, such as recommended limitations on the employee's use of respirators, while at the same time protecting employee privacy as much as possible by allowing certain information to be included only with the employee's written authorization. The date of the examination and a statement about the examination meeting the requirements of this standard are also included to provide the employer with evidence that compliance with the medical surveillance requirements are current.

The employer must obtain the written opinion within 45 days of the examination; OSHA believes this requirement will provide the licensed physician sufficient time to receive and consider the results of any tests included in the examination, including a follow-up BeLPT, and allow the employer to take any necessary protective measures in a timely manner. The requirement that the opinion be in written form would ensure that employers and workers have the benefit of this information. The standard requires the employer to ensure that the worker gets a copy of the licensed physician's written medical opinion within 45 days of the medical examination. This will allow workers to present it as proof of a current medical examination to future employers.

**§1910.1024 (k)(7) -- Medical Surveillance-- Referral to the CBD Diagnostic Center.**

(7) CBD diagnostic center. (i) The employer must provide an evaluation at no cost to the employee at a CBD diagnostic center that is mutually agreed upon by the employer and the employee. The examination must be provided within 30 days of:

(A) The employer's receipt of a physician's written medical opinion to the employer that recommends referral to a CBD diagnostic center; or

(B) The employee presenting to the employer a physician's written medical report indicating that the employee has been confirmed positive or diagnosed with CBD, or recommending referral to a CBD diagnostic center.

(ii) The employer must ensure that the employee receives a written medical report from the CBD diagnostic center that contains all the information required in paragraph (k)(5)(i), (ii), (iv), and (v) and that the PLHCP explains the results of the examination to the employee within 30 days of the examination.

(iii) The employer must obtain a written medical opinion from the CBD diagnostic center within 30 days of the medical examination. The written medical opinion must contain only the information in paragraphs (k)(6)(i), as applicable, unless the employee provides written authorization to release additional information. If the employee provides written authorization, the written opinion must also contain the information from paragraphs (k)(6)(ii), (iv), and (v), if applicable.

(iv) The employer must ensure that each employee receives a copy of the written medical opinion from the CBD diagnostic center described in paragraph (k)(7) of this standard within 30 days of any medical examination performed for that employee.

*Purpose:* The referral to the CBD diagnostic center for additional medical examination serves to identify workers who have beryllium-related medical disorders or other health problems that could be exacerbated by additional beryllium exposure. The referral will also help to determine if that employee will be able to work in the job involving beryllium exposure without increased risk of adverse health effects.

The general purposes of the medical surveillance provisions for beryllium include: to determine, when reasonably possible, if an individual worker is at increased risk for adverse health effects with continued exposure to beryllium; to identify beryllium-related adverse health effects for the purpose of taking appropriate intervention measures; and to determine workers' fitness to use personal protective equipment, such as respirators.

The requirement is consistent with Section 6(b)(7) of the OSH Act (29 U.S.C. 655(b)(7)), which requires that, when appropriate, OSHA include medical surveillance programs in its standards to determine whether exposure to the hazard addressed by the standard adversely affects the health of workers.

**§1910.1024 (l)(1) and (l)(2) --Medical removal.**

(1) An employee is eligible for medical removal, if the employee works in a job with airborne exposure at or above the action level and either:

(i) The employee provides the employer with:

(A) A written medical report indicating a confirmed positive finding or CBD diagnosis;  
or

(B) A written medical report recommending removal from airborne exposure to beryllium in accordance with paragraph (k)(5)(v) or (k)(7)(ii) of this standard; or

(ii) The employer receives a written medical opinion recommending removal from airborne exposure to beryllium in accordance with paragraph (k)(6)(v) or (k)(7)(iii) of this standard.

(2) If an employee is eligible for medical removal, the employer must provide the employee with the employee's choice of:

(i) Removal as described in paragraph (l)(3) of this standard; or

(ii) Remaining in a job with airborne exposure at or above the action level, provided that the employer provides, and ensures that the employee uses, respiratory protection that complies with paragraph (g) of this standard whenever airborne exposures are at or above the action level.

*Purpose:* The purpose of these provisions is to provide an option for medical removal of workers in jobs with airborne exposure to beryllium at or above the action level and who are diagnosed with CBD, confirmed positive, or otherwise recommended for removal by a physician. The medical removal provision is structured to allow the employee to retain discretion over whether the employer is informed of the employee's illness or diagnosis, so the purpose of the requirement for the employer's receipt of documentation is to trigger the removal requirements while ensuring the employer has notice.

#### **§1910.1024 (m)(1) -- Communication of hazards.**

**(1) General.** (i) Chemical manufacturers, importers, distributors, and employers must comply with all requirements of the HCS (29 CFR 1910.1200) for beryllium.

(ii) Employers must include beryllium in the hazard communication program established to comply with the HCS. Employers must ensure that each employee has access to labels on containers of beryllium and to safety data sheets, and is trained in accordance with the requirements of the HCS (29 CFR 1910.1200) and paragraph (m)(4) of this standard.<sup>[2]</sup>

*Purpose:* The purpose of ensuring that each employee has training and access to labels and safety sheets is to enable workers and downstream employers to take the precautions necessary to implement special practices to prevent or reduce beryllium exposure. Requirements that employers provide training to workers, both in this provision and elsewhere such as in paragraph (m)(3), are not collections of information.

#### **§1910.1024(m)(2)– Warning Signs**

---

<sup>[2][2]</sup> The Agency accounts for the burden hours and costs associated with compliance with the HCS, such as the development of a hazard communication program, under the Information Collection Request (ICR) for the HCS. OMB Control No. 1218-0072.



**(2) Warning signs.** (i) Posting. The employer must provide and display warning signs at each approach to a regulated area so that each employee is able to read and understand the signs and take necessary protective steps before entering the area.

(ii) Sign specification.

(A) The employer must ensure that the warning signs required by paragraph (m)(2)(i) of this standard are legible and readily visible.

(B) The employer must ensure each warning sign required by paragraph (m)(2)(i) of this standard bears the following legend:

**DANGER**  
**REGULATED AREA**  
**BERYLLIUM**  
**MAY CAUSE CANCER**  
**CAUSES DAMAGE TO LUNGS**  
**AUTHORIZED PERSONNEL ONLY**  
**WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING AND**  
**EQUIPMENT IN THIS AREA**

*Purpose:* Posting warning signs informs workers that they are entering a regulated area, and that they must have proper authorization before entering such an area. Warning signs allow workers and others to take the precautions necessary to avoid harmful beryllium exposures.

Under PRA, information originally supplied by the Federal government to the recipient for the purpose of disclosure to the public is not considered to be a collection of information (5 CFR 1320.3(c)(2)). The Agency had determined that §1915.1024(m)(2) warning signs is not a collection of information.

### **§1910.1024(m)(3) – Warning labels**

**Warning labels.** Consistent with the HCS (29 CFR 1910.1200), the employer must label each bag and container of clothing, equipment, and materials contaminated with beryllium, and must, at a minimum, include the following on the label:

**DANGER**

**CONTAINS BERYLLIUM**

**MAY CAUSE CANCER**

**CAUSES DAMAGE TO LUNGS**

**AVOID CREATING DUST**

**DO NOT GET ON SKIN**

*Purpose:* Warning labels inform workers and downstream employers of the hazards associated with beryllium, and that they may need to implement special practices to prevent or reduce beryllium exposure. Furthermore, the labels alert downstream employers that they may have an obligation to protect their workers under the standard.

As noted in §1915.1024(m)(2), information originally supplied by the Federal government to the recipient for the purpose of disclosure to the public is not considered to be a collection of information (5 CFR 1320.3(c)(2)). The Agency has determined 1910.1024(m)(3) -- §1915.1024(m)(3) --§1926.1124(m)(2) – warning labels are not collections of information.

**§1910.1024(m)(4)(iv) – Employee Information**

(iv) Employee Information. The employer must make a copy of this standard and its appendices readily available at no cost to each employee and designated employee representative(s).

*Purpose:* The purpose of the requirement to make a copy of the standard available to employees is to ensure that employees are aware of their employer’s obligations under the standard and to assist employees in recognizing, and protecting against, the hazards of beryllium. OSHA considers the requirement to make a copy of the Standard and its appendices available to workers to be a public disclosure of information originally supplied by the Federal government to the employer for the purpose of disclosure to the public, and thus not a collection of information pursuant to 5 CFR 1320.3(c)(2). Therefore, OSHA is taking no burden hours or cost for this requirement.

**§1910.1024 (n) -- Recordkeeping.**

**§1910.1024 (n)(1)(i), (ii), & (iii) -- Recordkeeping --Air Monitoring Data.**

(i) The employer must make and maintain a record of all exposure measurements taken to assess airborne exposure as prescribed in paragraph (d) of this standard.

(ii) This record must include at least the following information:

- (A) The date of measurement for each sample taken;
  - (B) The task that is being monitored;
  - (C) The sampling and analytical methods used and evidence of their accuracy;
  - (D) The number, duration, and results of samples taken;
  - (E) The type of personal protective clothing and equipment, including respirators, worn by monitored employees at the time of monitoring; and
  - (F) The name, social security number, and job classification of each employee represented by the monitoring, indicating which employees were actually monitored.
- (iii) The employer must ensure that exposure records are maintained and made available in accordance with the Records Access standard (29 CFR 1910.1020).

**§1910.1024 (n)(2)(i), (ii), & (iii) -- Recordkeeping -- Objective Data.**

(i) Where an employer uses objective data to satisfy the exposure assessment requirements under paragraph (d)(2) of this standard, the employer must make and maintain a record of the objective data relied upon.

(ii) This record must include at least the following information:

- (A) The data relied upon;
- (B) The beryllium-containing material in question;
- (C) The source of the objective data;
- (D) A description of the process, task, or activity on which the objective data were based; and
- (E) Other data relevant to the process, task, activity, material, or airborne exposure on which the objective data were based.

(iii) The employer must ensure that objective data are maintained and made available in accordance with the Records Access standard (29 CFR 1910.1020).

*Purpose:* These exposure records are necessary and appropriate for protection of worker health, enforcement of the standard, and development of information regarding the causes and prevention of occupational illnesses. Also, the Agency and others can use the records to identify illnesses and deaths that may be attributable to beryllium exposure, evaluate compliance programs, and assess the efficacy of the standard. Establishing and maintaining records of air-monitoring data permit employers, workers, OSHA, and other interested parties (i.e., industry trade associations and worker unions, or comparable organizations) to identify the levels, durations, and extent of beryllium exposure, determine if existing controls are protecting workers or whether additional controls are necessary to provide the required protection, and assess the relationship between beryllium exposure and the subsequent development of diseases. These

records also allow OSHA to ascertain whether employers are complying with the standard, thereby ensuring that workers are receiving adequate protection from beryllium exposure.

**§1910.1024 (n)(3) (i), (ii), & (iii) -- Recordkeeping-- Medical Surveillance.**

(i) The employer must make and maintain a record for each employee covered by medical surveillance under paragraph (k) of this standard.

(ii) The record must include the following information about the employee:

(A) Name, social security number, and job classification;

(B) A copy of all licensed physicians' written medical opinions for each employee; and

(C) A copy of the information provided to the PLHCP as required by paragraph (k) (4) of this standard.

(iii) The employer must ensure that medical records are maintained made available in accordance with the Records Access standard (29 CFR 1910.1020).

*Purpose:* These medical-surveillance records, like exposure records, are necessary and appropriate for protection of worker health, enforcement of the Standards, and development of information regarding the causes and prevention of occupational illnesses. Worker access to medical-surveillance records helps protect workers because such records contribute to the evaluation of workers' health and enable workers and their healthcare providers to make informed health care decisions. Furthermore, the employer can evaluate medical-surveillance data they receive for indications that workplace conditions are associated with increased risk of beryllium-related illnesses, and take appropriate corrective actions. Finally, the Agency and others can use medical surveillance records to identify illnesses and deaths that may be attributable to respirable beryllium exposure, evaluate compliance programs, and assess the efficacy of the Standards.

The proposal is consistent with Section 6(b)(7) of the OSH Act (29 U.S.C. 655(b)(7)), which requires that, when appropriate, OSHA include medical-surveillance programs in its standards to determine whether exposure to the hazard addressed by the standard adversely affects the health of workers.

**§1910.1024 (n)(4)(i) & (ii) -- Recordkeeping -- Training.**

(4) Training. (i) At the completion of any training required by this standard, the employer must prepare a record that indicates the name, social security number, and job classification of each employee trained, the date the training was completed, and the topic of the training.

(ii) This record must be maintained for three years after the completion of training.

*Purpose:* The creation and maintenance of the training records will permit both OSHA and employers to ensure that required training has occurred on schedule.

**§1910.1024 (n)(5) -- Recordkeeping --Employee Access to Records.**

(5) Access to records. Upon request, the employer must make all records maintained as a requirement of this standard available for examination and copying to the Assistant Secretary, the Director, each employee, and each employee's designated representative(s) in accordance the Records Access standard (29 CFR 1910.1020).

*Purpose:* OSHA is requiring access to the records to ensure enforcement of the Standards and to assist employees and their representatives in the development of information regarding the causes and prevention of occupational illnesses.

**§1910.1024 (n)(6) -- Recordkeeping -- Transfer of Records.**

(6) Transfer of records. The employer must comply with the requirements involving transfer of records set forth in the Records Access standard (29 CFR 1910.1020).

Paragraph (h) of § 1910.1020 requires employers who cease to do business to transfer medical and exposure-monitoring records to the successor employer, who then must receive and maintain the records. If no successor employer is available, the employer must, at least three months before ceasing business, notify current workers who have records of their right to access these records.

*Purpose:* OSHA considers the employer's transfer of records to a successor employer to be usual and customary communications during the transition from one employer to a successor employer, and is not taking any burden or cost for this provision in Item 12. In this regard, the employer would communicate the location of all records, including employee exposure-monitoring and medical records, at the facility to the successor employer during the transfer of business operations, as a matter of usual and customary business practice.

**3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce the burden.**

Employers may use improved information technology when establishing and maintaining the required records. The Agency wrote the paperwork requirements of the proposed standard in performance-oriented language, i.e., in terms of what data to collect, not how to record the data.

**4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use of the purposes described in Item 2 above.**

The information collection requirements of the Beryllium general industry standard are specific to each employer and worker involved, and no other source or agency duplicates these

requirements or can make the required information available to the Agency (i.e., the required information is available only from employers).

**5. If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.**

As part of the 2007 Small Business Regulatory Enforcement Fairness Act (SBREFA) panel process, the SBREFA Panel recommended that OSHA analyze a PEL-only standard as a regulatory alternative. The Panel also recommended that OSHA consider applying ancillary provisions of the standard so as to minimize costs for small businesses where exposure levels are low (OSHA–H005C–2006–0870) (Document ID 0345). OSHA solicited public comments on all relevant issues, including health effects, risk assessment, significance of risk, technological and economic feasibility, and the provisions of the proposed regulatory text.

Medical surveillance was a subject of special concern to small entity representatives (SERs) during the SBREFA process, and the SBREFA Panel offered many comments and recommendations related to medical surveillance for OSHA’s consideration. Table VIII-17 of the Preamble to the Final Rule addresses the SBAR Panel recommendations and OSHA’s response to those recommendations. OSHA seeks to ensure that the requirements of the final standard offer workers adequate medical surveillance while limiting the costs to employers.

**6. Describe the consequences to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.**

The information collection frequencies specified by the general industry standard are the minimum frequencies that the Agency believes are necessary to ensure that employers and OSHA can effectively monitor the exposure and health status of workers, thereby preventing serious illness or death resulting from hazardous exposure to beryllium.

OSHA is proposing to revoke the two comprehensive standards applicable to the construction and shipyard sectors, but to retain the new lower PEL of 0.2  $\mu\text{g}/\text{m}^3$  and the STEL of 2.0  $\mu\text{g}/\text{m}^3$  for those sectors.

**7. Explain any special circumstances that would cause an information collection to be conducted in a manner:**

- **Requiring respondents to report information to the agency more often than quarterly;**
- **Requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;**
- **Requiring respondents to submit more than an original and two copies of any document;**

- **Requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records, for more than three years;**
- **In connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;**
- **Requiring the use of a statistical data classification that has not been approved by OMB;**
- **That includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or**
- **Requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.**

Under paragraph (d)(6) of the general industry standard, employers must inform workers, in writing or by posting, of the exposure-assessment results no later than 15 working days after obtaining the results. If these results indicate that a worker's exposures are above the PEL, the notification must state what corrective actions the employer is taking to reduce the worker's exposure to or below the PEL.

**8. If applicable, provide a copy and identify the data and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.**

**Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.**

**Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every three years -- even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.**

On January 9, 2017, OSHA published its final rule Occupational Exposure to Beryllium and Beryllium Compounds in the Federal Register (82:2470-2757 (1/9/17)). On March 21, 2017 OSHA published a delay of the effective date for the final beryllium rule to May 20, 2017 in the Federal Register (82 FR 14439 (3/21/17)). This action was based on comments received on OSHA's proposed delay of effective date for the final rule in the Federal Register (82 FR 12318 (3/2/17)). OSHA proposed this delay in accordance with the January 20, 2017 Presidential directive from the Assistant to the President and Chief of Staff, entitled "Regulatory Freeze

Pending Review” (82 FR 8346 (1/24/17)) that directed agencies to consider further delaying the effective date for regulations beyond the initial 60-day period.

OSHA has evidence that beryllium exposure above 0.2  $\mu\text{g}/\text{m}^3$  can occur in abrasive blasting in construction, abrasive blasting in shipyards, and welding in shipyards. OSHA determined that exposures at that level create a significant risk of material impairment of health, including developing CBD and lung cancer. These operations, however, are already regulated by other OSHA construction and shipyards standards. OSHA requested, but did not receive, additional data during the previous rulemaking about exposures in these operations and about protections provided by other OSHA standards. In light of the limited information regarding exposures and the potential that other OSHA standards may offer protection from beryllium exposures, OSHA is proposing to revoke the comprehensive standard for construction and the comprehensive standard for shipyards while retaining the new lower PELs for these sectors. This proposal allows OSHA to open the rulemaking record to receive more information about exposures, controls, and procedures in operations within the construction and shipyard sectors. The NPRM advises commenters that they may submit comments on the information collections in the rule directly to OMB. The NPRM citation is identified in the reginfo.gov database.

**9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.**

The Agency will not provide payments or gifts to the respondents.

**10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.**

To ensure that the personal information contained in medical records required by the proposed standard remains confidential, the Agency developed and implemented 29 CFR 1913.10 (“Rules of Agency Practice and Procedure Concerning OSHA Access to Employee Medical Records”) to regulate access to these records.

**11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.**

Perceived questions of a sensitive nature may be included in medical questions posed by the PLHCP to properly diagnose the patient and make appropriate recommendations regarding further testing and the employee’s occupational exposure to beryllium.

**12. Provide estimates of the hour burden of the collection of information. The statement should:**

**Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates.**



**Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.**

- **If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens.**
- **Provide estimates of annualized costs to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories.**

OSHA based the burden hour and cost reduction determinations on the Preliminary Economic Analysis (“PEA”) for the Beryllium proposal, which is available in the in the Notice of Proposed Rulemaking.<sup>[3]</sup> This Supporting Statement provides a summary of the determinations made by the Agency for the burden hours, burden-hour cost, and capital (operation and maintenance) costs under Items 12 and 13 of this Supporting Statement.<sup>[4]</sup>

OSHA published its final rule Occupational Exposure to Beryllium and Beryllium Compounds in the Federal Register (82:2470-2757 (1/9/17)). Currently, as described in Section IX.C and reported in Table IX-2 of the preamble of the final rule, OSHA estimates that a total of 61,747 employees in 5,872 establishments are potentially at risk from exposure to beryllium (see Table III-13 in the FEA). The proposal would reduce the total number of employees 61,747 by 11,486 for a new total of 50,261 employees and the total number of establishments 5,872 would be reduced by 2,796 for a new total of 3,076. Therefore, OSHA estimates that a total of 50,261 employees in 3,076 establishments are potentially at risk from exposure to beryllium and beryllium compounds in general industry.

For the sole purpose of calculating burden hours and costs under the Paperwork Reduction Act, this supporting statement has rounded certain numbers obtained from the PEA, as well as totals stated in the supporting statement equations. Such presentation makes it easier for the public to read and validate the supporting statement’s burden hour and cost estimates. In accordance with the regulations implementing PRA, the Department has also discounted burden estimates to account for that portion of the regulated community that would already adhere to the standards as a regular business practice even in the absence of the regulatory provision. See 5 CFR 1320.3(b)(2).

## **Wage Rates**

The Agency obtained the wage rates from the Beryllium proposal PEA. The wages are based on the May 2016 Occupational Employment Statistics (OES) of the Bureau of Labor Statistics (BLS, 2017a) released in March of 2017 and utilize the median wage for the appropriate occupation and NAICS. The Standard Occupational Classification code (SOC) has been

---

<sup>[3]</sup><sup>[3]</sup>The rulemaking docket is available for public inspection and copying in the OSHA Docket Office and at <http://www.regulations.gov> (Docket Number: OSHA-H005C-2006-0870).

<sup>[4]</sup><sup>[4]</sup>The PEA tables referenced in this Supporting Statement may be downloaded from [www.regulations.gov](http://www.regulations.gov).

provided for each occupational title. OSHA applied a fringe markup (loading factor) of 46.0 percent of base wages (BLS, 2016c, Document ID 1980); loaded hourly wages by application group and SOC are shown in Table V-10 in the PEA.

<b>Human Resources (HR) Manager</b> (SOC: 11-3121)	<b>\$72.42</b>
<b>Supervisors of Production and Operating Workers</b> (SOC: 51-1011 <sup>[5]</sup> )	<b>\$41.08</b>
<b>Production Worker</b> (SOC: 51-0000)	<b>\$24.16</b>
<b>Clerical Worker</b> (SOC: 43-4071)	<b>\$22.53</b>

#### **A. Exposure Assessment**

Paragraph (d) sets forth requirements for assessing employee exposures to beryllium. Paragraph (d)(1) requires employers to choose either the performance option in paragraph (d)(2) or the scheduled monitoring option in paragraph (d)(3). The collections of information and associated burden are therefore accounted for in paragraph (d)(2) and (d)(3).

#### **§1910.1024 (d)(2) -- Performance Option.**

When the employer elects the performance option, the employer must assess the 8-hour TWA exposure and the 15-minute short-term exposure for each employee on the basis of any combination of air monitoring data and objective data sufficient to accurately characterize airborne exposure to beryllium. Employers do not have to conduct initial exposure monitoring if they relied on any combination of air monitoring and objective data.

OSHA has not taken any separate burden associated with the performance option, assuming for the purposes of this analysis that all employers would elect the more burdensome scheduled monitoring system. OSHA recognizes that the performance option is less burdensome and has thus overestimated the burden hours for the monitoring option under this approach.

#### **§1910.1024 (d)(3)(i), (ii)&(iii) -- Scheduled Monitoring Option.**

##### **1. Initial Monitoring**

---

<sup>[5][5]</sup> As stated earlier, all wage rates with no explicit source other than the given Standard Occupational Classification (SOC) are from the 2016 Occupational Employment Statistics (OES) of the Bureau of Labor Statistics (BLS, 205), and is the median wage for that SOC.

Paragraph (d)(3)(i) requires the employer to perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the airborne exposure of employees on each shift, for each job classification, and in each work area.

Paragraph (d)(3)(ii) requires the employer to perform initial monitoring to assess the short-term exposure from 15-minute personal breathing zone air samples measured in operations that are likely to produce airborne exposure above the STEL for each work shift, for each job classification, and in each work area. Paragraph (d)(3)(iii) allows the employer to sample a representative fraction of these employees in order to meet the requirements of paragraph (d)(3) of this standard where several employees perform the same tasks on the same shift and in the same work area. And, paragraph (d)(3)(iv) allows the employer to discontinue monitoring for those employees whose airborne exposure is represented by such monitoring if initial monitoring indicates that airborne exposure is below the action level and at or below the STEL.

The total number of workers affected is 50,261.<sup>[6]</sup> Of these affected workers, there are 6,804 dental laboratory workers who will not be sampled since laboratories will substitute to a different material in lieu of continuing to work with beryllium. Excluding the substituting dental laboratory workers, the number of affected workers is 43,457. Note:  $50,261 - 6,804 \text{ dental labs} = 43,457$ . The number of workers that will be directly subjected to initial monitoring (10,864) is the number of affected workers in each NAICS, divided by 4 because there are 4 workers represented by each sample  $\{43,457/4=10,864\}$ . Each sampled production worker will incur 30 minutes (0.5 hours) of lost work time during air monitoring,<sup>[7]</sup> at an hourly wage rate of \$24.16. Baseline non-compliance with this requirement is estimated to be 96 percent. The burden hours and cost associated with these provisions are:

**Burden hours:**  $10,864 \text{ (samples)} \times 0.96 \text{ (non-compliance rate)} \times 0.5 \text{ (hours of Production Worker time)} = \mathbf{5,215 \text{ hours}}$

**One-Time Cost:**  $5,215 \text{ (hours)} \times \$24.16 \text{ (Production Worker wage)} = \mathbf{\$125,994}$

## 2. Periodic Exposure Monitoring

### **§1910.1024 (d)(3)(v),(vi),(vii) & (viii) -- Scheduled Monitoring Option.**

Paragraph (d)(3)(v) requires the employer to repeat such monitoring within six months of the most recent monitoring where the most recent exposure monitoring indicates that airborne exposure is at or above the action level but at or below the TWA PEL. Paragraph (d)(3)(vi) requires that the employer to repeat such monitoring within three months of the most recent 8-

---

<sup>[6]</sup>[6]. This number has been adjusted down from 61,747 to 50,261 affected workers because of the removal of 11,486 construction and shipyard workers. The total number of affected workers can be found in Table V-4 of the PEA.

<sup>[7]</sup>[7] Although the samples are estimated to represent, on average, the exposures of four employees per sample, the sampling will typically be conducted in the direct breathing area of only a single employee per sample. Thus, the productivity loss would only affect one worker per sample.

hour TWA exposure monitoring where the most recent exposure monitoring indicates that airborne exposure is above the TWA PEL. Paragraph (d)(3)(vii) requires that the employer must repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken seven or more days apart, are below the action level, at which time the employer may discontinue 8-hour TWA exposure monitoring for those employees whose exposure is represented by such monitoring, except as otherwise provided in paragraph (d)(4) of this standard where the most recent (non-initial) exposure monitoring indicates that airborne exposure is below the action level. And, paragraph (d)(3)(viii) requires that the employer must repeat such monitoring within three months of the most recent short-term exposure monitoring until two consecutive measurements, taken seven or more days apart, are below the STEL, at which time the employer may discontinue short-term exposure monitoring for those employees whose exposure is represented by such monitoring, except as otherwise provided in paragraph (d)(4) of this standard where the most recent exposure monitoring indicates that airborne exposure is above the STEL.

*Between AL and PEL:*

The existing ICR estimates there are 20,732 at-risk workers above the action level and below the PEL. The 5,877 workers in dental labs above the action level and below the PEL are excluded because sampling is not expected for these workers. The remaining workers are divided into two worker categories: 5,744<sup>1</sup> abrasive blasters and maritime welding workers and 9,111 other workers.

Abrasive Blasting and Shipyard Welding Workers

OSHA is removing the number of semi-annual exposure monitoring samples for abrasive blasting and shipyard welding workers which is currently calculated by taking the total number of those workers between AL and PEL (5,744), dividing it by four workers represented per sample, multiplying the samples by 120%,<sup>2</sup> and then multiplying by two per year because this is done every six months. This amounts to a 3,446 sample reduction. (5,744 AL to PEL /4 workers per area x 120% x 2 samples per year = 3,446).

Other Workers

OSHA is retaining the number of monitoring samples being taken for other workers (General Industry, excluding dental laboratory workers) which was calculated by dividing the number of workers (9,111) by four workers represented per sample, then multiplying the samples by two per year for 4,556 samples.

*Above the PEL:*

---

<sup>1</sup> Note the approved ICR estimates 5,743 abrasive blasting workers.

<sup>2</sup> The abrasive blasting workers sampling requires an additional 20% more samples to account for the high failure rate resulting from clogged sampling equipment.

The existing ICR estimates there are 1,056 workers above the PEL. The 434 workers in dental labs with exposures above the PEL are excluded because sampling is not expected for those workers. This results in total of 622 workers. Of the 622 workers, 217 are abrasive blaster workers who have exposures above the PEL.

#### Abrasive Blasting and Shipyard Welding Workers

OSHA is removing the number of quarterly exposure monitoring samples for abrasive blasting and shipyard welding workers, which is currently calculated by taking the total number of those workers (217), dividing it by four workers per sample, multiplying it by 120%, and then multiplying by four times per year. This would result in a reduction of 260 samples per year. (217 above the PEL/4 x 120% x 4).

#### Other Workers

OSHA is retaining the number of monitoring samples for the 406 other workers above the PEL (General Industry, excluding dental laboratory workers) which is currently calculated by dividing the number of 406 workers by four workers per sample, then multiplying by four times per year to equal 406 samples.

#### *Summary*

The existing ICR estimated that there were 8,002 samples between the action level and the PEL and 666 samples above the PEL for a total of 8,667 samples (rounding to match FEA). The Agency is proposing to reduce the number of samples by 3,707 as a result of revoking the comprehensive standards for shipyards and construction.

Therefore, the Agency estimates that 4,960 workers will be subject to periodic exposure monitoring. This total includes workers between the AL (0.1 µg/m<sup>3</sup>) and PEL (0.2 µg/m<sup>3</sup>) that are sampled twice per year, and those workers over the PEL that are sampled four times per year.

OSHA estimates that each employer will conduct periodic exposure monitoring (once every six months when initial or subsequent exposure monitoring reveals that worker exposures are at or above the action level, but at or below the PEL; and above the PEL. Each periodic exposure monitoring sample (4,960 samples) will result in 30 minutes (0.5 hours) of lost work time during air monitoring. Baseline non-compliance with this requirement is estimated to be 96 percent. The burden hours and cost associated with these provisions are:

**Burden hours:** 4,960 (samples) × 0.96 (non-compliance rate) × 0.5 (hours of Production Worker time) = **2,381 hours**

**Annual Cost:** 2,381 (hours) × \$24.16 (Production Worker wage) = **\$57,525**

### 3. Additional Exposure Monitoring

#### **§1910.1024 (d)(4) -- Reassessment of Exposure.**

The employer must reassess airborne exposure whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional airborne exposure at or above the action level or STEL, or when the employer has any reason to believe that new or additional airborne exposure at or above the action level or STEL has occurred.

Of the number of at risk workers subject to initial monitoring, 10,864 workers (see previous paragraph, Initial Monitoring), OSHA estimates 10% will require additional monitoring resulting from changes in the production process, materials, equipment, personnel, work practices, or control methods. Each worker will incur 30 minutes (0.5 hours) of lost work time during air monitoring. Baseline non-compliance with this requirement is estimated to be 96 percent. The burden hours and cost associated with these provisions are:

**Burden hours:**  $10,864 \times 10\%$  (workers sampled)  $\times 1$  (assessment per year)  $\times 0.96$  (non-compliance rate)  $\times 0.5$  (hours of Production Worker time) = 522 hours

**Cost:** 522 (hours)  $\times$  \$24.16 (Production Worker wage) = \$12,612

### 4. Employee Notification

#### **§1910.1024 (d)(6)(i)&(ii) -- Employee Notification of Assessment Results.**

Paragraph (d)(6)(i) requires employers, within 15 working days after completing an exposure assessment in accordance with paragraph (d) of this standard, to notify each employee whose airborne exposure is represented by the assessment of the results of that assessment individually in writing or by posting the results in an appropriate location that is accessible to each of these employees.

Whenever an exposure assessment indicates that airborne exposure is above the TWA PEL or STEL, paragraph(d)(6)(ii) requires the employer to describe in the written notification the corrective action being taken to reduce airborne exposure to or below the exposure limit(s) exceeded where feasible corrective action exists but had not been implemented when the monitoring was conducted.

These burden hours are included in the Human Resources Manager time under Item 12 C.1 Recordkeeping §1910.1024 (n)(1). As a result, employee notification does not appear as a separate entry on *Table B. Summary of Burden Hours, Burden-Hour Cost and Capital Cost Under Item 12 of this Supporting Statement*

## B. Beryllium Work Areas and Regulated Areas

### 1. Written Exposure Control Plan (§§ 1910.1024(f)(1), (i), (ii), & (iii))

#### **§1910.1024 (f)(1)(i), (ii), &(iii) -- Methods of Compliance --Written Exposure Control Plan.**

Paragraph (f)(1) requires the employer to establish, implement, and maintain a written exposure control plan for beryllium work areas. The employer is required to review and evaluate the effectiveness of each written exposure control plan at least annually and update it as necessary. Also, the employer is required to make a copy of the written exposure control plan and make it accessible to each employee who is, or can reasonably be expected to be, exposed to airborne beryllium.

As a result of removing 2,796 construction and shipyard establishments, the affected establishments will be reduced to 3,076.

#### *a. Developing and Implementing a Written Exposure Control Plan*

As a result of removing 2,796 construction and shipyard industries, the affected establishments will be reduced to 3,076.

#### *Baseline Per-Establishment Costs:*

OSHA estimates that 3,076 establishments are potentially at risk from exposure to beryllium. The Agency estimates a Human Resource Manager, earning an hourly wage of \$72.42, spends eight hours per establishment to develop and implement a written exposure control plan. Baseline non-compliance with this requirement is estimated to be 57 percent.

**Burden hours:**  $3,076 \text{ (written plans)} \times 0.57 \text{ (non-compliance rate)} \times 8 \text{ (hours of HR Manager time)} = \mathbf{14,027 \text{ hours}}$

**One-Time Cost:**  $14,027 \text{ (hours)} \times \$72.42 \text{ (HR Manager wage)} = \mathbf{\$1,015,835}$

#### *Additional Costs based on Size of Establishment*

The cost to develop a written exposure control plan would also vary with the number of employees, with larger establishments having higher costs than smaller establishments. Therefore OSHA has added additional burden and cost on a per-employee basis. OSHA estimates that there are a total of 43,457<sup>[10]</sup> workers at risk with a non-compliance rate of 62%. Managers are estimated to need 0.5 hours per employee to write the plan.

---

<sup>[10]</sup>This is the number of at-risk workers (50,261), less the substituting dental labs (less the 5,954 and 850 for the two substituting dental labs NAICS), totaling 43,457.

**Burden hours:**  $43,457 \text{ (employees)} \times 0.62 \text{ (non-compliance rate)} \times 0.5 \text{ (hours of HR Manager time)} = \mathbf{13,472 \text{ hours}}$

**One time Cost:**  $13,472 \text{ (hours)} \times \$72.42 \text{ (HR Manager wage)} = \mathbf{\$975,642}$

**Total cost:**  $\$1,015,618 + \$975,642 = \mathbf{\$1,991,260}$

*b. Maintaining and Updating a Written Exposure Control Plan*

The employer must maintain and update the exposure control plan when: any change in production processes, materials, equipment, personnel, work practices, or control methods results or can reasonably be expected to result in new or additional exposures to beryllium; an employee is confirmed positive, is diagnosed with CBD, or shows signs or symptoms associated with exposure; or the employer has any reason to believe that new or additional exposures are occurring or will occur.

Employers must make a copy of the written exposure control plan accessible to each employee who is or can reasonably be expected to be exposed to airborne beryllium in accordance with OSHA's Access to Employee Exposure and Medical Records (Records Access) standard (29 CFR 1910.1020(e)). Burden hours and costs for employers to allow employees access to the written exposure control plan are included in this item of the supporting statement under section D, Employee Access to Exposure Monitoring and Medical Records, subsection 2, Access to Records (§1910.1024(n)(6)).

OSHA estimates that there are a total of 43,457 employees at risk of exposures at or above the action level annually. Managers are estimated to need 12 minutes (0.2 hours) per affected employee per quarter, or 48 minutes (4 x 12) (0.8 hours) per affected employee per year to review and update the plan. Baseline non-compliance with this requirement is estimated to be 62 percent.

**Burden hours:**  $43,457 \text{ (employees)} \times 0.62 \text{ (non-compliance rate)} \times 0.8 \text{ (hours of HR Manager time)} = \mathbf{21,555 \text{ hours}}$

**Annual Cost:**  $21,555 \text{ (hours)} \times \$72.42 \text{ (HR Manager wage)} = \mathbf{\$1,561,013}$

2. Respiratory Protection (g)

**§1910.1024 (g)(2) -- §1915.1024 (g) -- §1926.1124 (g)-- Respiratory protection program.**

Where this standard requires an employer to provide respiratory protection, the selection and use of such respiratory protection must be in accordance with the Respiratory Protection standard (29 CFR 1910.134).

*Develop and Implement Written respiratory program*



There is a cost per establishment to set up a written respirator program in accordance with the respiratory protection standard (29 CFR 1910.134). The respiratory protection standard requires written procedures for the proper selection, use, cleaning, storage, and maintenance of OSHA estimates that 465<sup>[11]</sup> establishments are potentially at risk from exposure to beryllium that could exceed the PEL. There are 465 establishments that will need to develop and implement a respirator program. It estimates that a Human Resource Manager, earning an hourly wage of \$72.42, would spend eight hours per establishment to develop and implement a written respirator program. Baseline non-compliance with this requirement is estimated to be 41 percent.

**Burden hours:** 465 (respirator program per establishment)  $\times$  0.41 (non-compliance rate)  $\times$  8 (hours of HR Manager time) = **1,525 hours**

**One-Time Cost:** 1,525 (hours)  $\times$  \$72.42 (HR Manager wage) = **\$110,441**

#### *Updating and Maintaining:*

There are 465 establishments that will need to update and maintain a respirator program. OSHA estimates that a Human Resource Manager, earning an hourly wage of \$72.42, would spend two hours per establishment to maintain and update a written respirator program. Baseline non-compliance with this requirement is estimated to be 41 percent.

**Burden hours:** 465 (respirator program per establishment)  $\times$  0.41 (non-compliance rate)  $\times$  2 hours (HR Manager time) = **381 hours**

**One-Time Cost:** 381 (hours)  $\times$  \$72.42 (HR Manager wage) = **\$27,592**

### 3. Respirator Fit testing:

#### *In-House Fit Testing for the Employees*

The employers will conduct respirator fit testing for the 650 workers<sup>[12]</sup> who will need to wear respirators. OSHA estimates that it will take 30 minutes (0.5 hours) for a worker to be fit-tested per respirator and 100% of the 650 workers will need to be fit tested.

**Burden hours:** 650 (employees)  $\times$  1 (non-compliance rate)  $\times$  0.5 (hours of employee time) = **325 hours**

**Annual Cost:** 325 (hours)  $\times$  \$24.16 (Employee wage) = **\$7,852**

#### *In-House Fit Testing by Supervisors*

<sup>[11][11]</sup> Source: FEA spreadsheets, Tab "Rule". This number is derived from subtracting the number of substituting dental firms from the total number of firms with exposures above the PEL.

<sup>[12][12]</sup> Source: Table V-14, *Number of Workers needing Respirators and Respirator Costs, by sector and NAICS Industry*, of the FEA.

The employers will conduct in-house fit testing for the 650 workers who will need to wear respirators. OSHA estimates that the in-house supervisors will administer the 650 fit-tests and it will take 30 minutes (0.5 hours) for a worker to be fit-tested per respirator and 100% of the 650 workers will need to be fit tested.

**Burden hours:** 650 (Supervisor)  $\times$  1 (non-compliance rate)  $\times$  0.5 (hours of Supervisor time) = **325 hours**

**Annual Cost:** 325 (hours)  $\times$  \$41.08 (Supervisor wage) = **\$13,351**

#### 4. Personal Protective Clothing and Equipment

##### **§1910.1024 (h)(3)(iii) -- Personal Protective Clothing and Equipment --Cleaning and Replacement.**

Paragraph (h)(3)(iii) requires the employer to inform in writing the persons or the business entities who launder, clean or repair the personal protective clothing or equipment required by this standard of the potentially harmful effects of airborne exposure to and dermal contact with beryllium and that the personal protective clothing and equipment must be handled in accordance with this standard.

The employer must inform in writing the persons or the business entities that launder, clean, or repair the personal protective clothing or equipment required by this standard of the potentially harmful effects of airborne exposure to beryllium and dermal contact with beryllium compounds, as well as how the personal protective clothing and equipment must be handled in accordance with this standard.

There are 3,076 establishments potentially at risk from exposure to beryllium that will need to send out clothing and equipment for laundering, cleaning, or repair. OSHA estimates that it will take approximately 10 minutes (0.17 hours) of a Clerical worker's time to inform the person or business in writing of the potentially harmful effects of the laundering, cleaning or repair of the clothing or equipment. Baseline non-compliance with this requirement is estimated to be 21 percent.

**Burden hours:** 3,076 (establishments)  $\times$  0.21 (non-compliance rate)  $\times$  0.17 (hours of Clerical worker time) = **110 hours**

**Annual Cost:** 110 (hours)  $\times$  \$22.53 (Clerical worker's wage) = **\$2,478**

#### 5. Medical Surveillance

##### **§1910.1024 (k)(1), (2), and (3) -- Medical Surveillance.**

Paragraph (k)(1) requires the employer to make medical surveillance required by this paragraph available at no cost to the employee, and at a reasonable time and place, to each employee: (A) Who is or is reasonably expected to be exposed at or above the action level for more than 30

days per year; (B) Who shows signs or symptoms of CBD or other beryllium-related health effects; (C) Who is exposed to beryllium during an emergency; or (D) Whose most recent written medical opinion required by paragraph (k)(6) or (k)(7) recommends periodic medical surveillance.

Also, the employer must ensure that all medical examinations and procedures required by this standard are performed by, or under the direction of, a licensed physician.

Paragraph (k)(2), requires the employer to provide a medical examination within 30 days of either: (A) An employee meets the criteria of paragraph (k)(1)(i)(A), unless the employee has received a medical examination, provided in accordance with this standard, within the last two years; or (B) An employee meets the criteria of paragraph (k)(1)(i)(B) or (C). And at least every two years thereafter for each employee who continues to meet the criteria of paragraph (k)(1)(i)(A),(B), or (D). Also, at the termination of employment for each employee who meets any of the criteria of paragraph (k)(1)(i) of this standard at the time the employee's employment terminates, unless an examination has been provided in accordance with this standard during the six months prior to the date of termination.

The number of workers subject to initial medical surveillance in the first year and periodic surveillance in each year includes both those who are over the AL and those showing signs and symptoms (of CBD or sensitization).

The medical surveillance for the number of exams is 14,607. OSHA estimated the examination<sup>[13]</sup> requires 125 minutes (or 2.08 hours) away from work for each employee each year to complete an initial medical examination. This includes time for traveling, a health history review, the physical exam, a beryllium lymphocyte proliferation test (BeLPT), the pulmonary function test, and employee time when the PLHCP explains the results of the medical examination to the employee. Baseline non-compliance with this requirement is estimated to be 55 percent. The burden hours and annual cost associated with these provisions are:

#### *Annual Exams*

**Burden hours:** 14,607 (examinations) x 0.55 (non-compliance rate) x 2.08 (hours of Production Worker time) = **16,710 hours**

**Annual Cost:** 16,710 hours x \$24.16 (Production worker wage) = **\$403,714**

Note: The Agency estimates that 10 percent of the standard medical examinations will lead to further tests recommended by the PLHCP<sup>[14]</sup> and are included in the cost and time of the 14,607 employees.

#### *Referral exams*

---

<sup>[13][13]</sup> Paragraph (k)(3) provides the content of examinations.

<sup>[14][14]</sup> These exposure monitoring unit costs are summarized in the spreadsheets of the PEA.

§1910.1024 (k)(7) --§ 1915.1024 (k)(7) --§ 1926.1124 (k)(7)

The employer must provide an evaluation at no cost to the employee at a CBD diagnostic center that is mutually agreed upon by the employer and the employee. The examination must be provided within 30 days of; (A) The employer's receipt of a physician's written medical opinion to the employer that recommends referral to a CBD diagnostic center; or (B) The employee presenting to the employer a physician's written medical report indicating that the employee has been confirmed positive or diagnosed with CBD, or recommending referral to a CBD diagnostic center.

*Referral exams to the CBD Diagnostic Center --Traveling Workers*

The estimated annual number of referrals that will require traveling more than a day to the CBD diagnostic center is 690. It will take 24 hours and 15 minutes for each employee to travel by plane to the center and complete the medical examination.

**Burden hours:** 690 referrals traveling x 1 (non-compliance) x 24.25 hours = **16,733 hours**

**Cost:** 16,733 hours x \$24.16 (Production worker wage) = \$404,269

*Referral exams to the CBD Diagnostic Center --Non-Traveling Workers*

The estimated annual number of referrals exams taking less than a day to travel to the CBD diagnostic center is 230. It will take 4 hours and 15 minutes for each employee to travel to the center in town and complete the medical examination.

**Burden hours:** 230 referrals non travel x 1(non-compliance) x 4.25 hours = **978 hours**

**Cost:** 978 hours x \$24.16 (Production worker wage) = \$23,628

6. Information Provided to the PLHCP

**§1910.1024 (k)(4)-- Medical Surveillance-- Information Provided to the PLHCP.**

(4)The employer must ensure that the examining PLHCP (and the agreed-upon CBD diagnostic center, if an evaluation is required under paragraph (k)(7) of this standard) has a copy of this standard and must provide the following information, if known:

(i) A description of the employee's former and current duties that relate to the employee's airborne exposure to and dermal contact with beryllium;

(ii) The employee's former and current levels of airborne exposure;

(iii) A description of any personal protective clothing and equipment, including respirators, used by the employee, including when and for how long the employee has used that personal protective clothing and equipment; and

(iv) Information from records of employment-related medical examinations previously provided to the employee, currently within the control of the employer, after obtaining written consent from the employee.

In the standard, the employer must ensure that the examining PLHCP (and the agreed-upon CBD diagnostic center, if an evaluation is required under paragraph (k)(7) of this standard) has a copy of this standard and shall provide the following information, if known: a description of the employee's former and current duties that relate to the employee's occupational exposure; the employee's former and current levels of occupational exposure; a description of any personal protective clothing and equipment, including respirators, used by the employee, including when and for how long the employee has used that personal protective clothing and equipment; and information from records of employment-related medical examinations previously provided to the employee, currently within the control of the employer, after obtaining a medical release from the employee.

OSHA estimates that it will take 15 minutes (.25 hours) of a Supervisor's time to gather and provide the information needed for the PLHCP. Baseline non-compliance with this requirement is estimated to be 55 percent.

**Burden hours:**  $14,607 \text{ (employees)} \times 0.55 \text{ (non-compliance rate)} \times 0.25 \text{ (hours of Supervisor time)} = \mathbf{2,008 \text{ hours}}$

**Annual Cost:**  $2,008 \text{ (hours)} \times \$41.08 \text{ (Supervisor wage)} = \mathbf{\$82,489}$

#### 7. Licensed Physician's Written Medical Opinion for the Employer

#### **§1910.1024 (k)(6) --§ 1915.1024 (k)(6) --§ 1926.1124 (k)(6) -- Medical Surveillance-- Licensed Physician's Written Medical Opinion for the Employer.**

Paragraph (k)(6) requires the employer to obtain a written medical opinion from the licensed physician within 45 days of the medical examination (including any follow-up BeLPT required under paragraph (k)(3)(ii)(E) of this standard).

There are 14,607 affected employees that the employer will need to provide a copy of the licensed physician's written opinion. OSHA estimates that it will take 5 minutes (0.08 hour) of a Supervisor's time to provide a copy of the information to the employee. Baseline non-compliance with this requirement is estimated to be 55 percent.

*Supervisor:*

**Burden hours:** 14,607 (employees) × 0.55 (non-compliance rate) × 0.08 (hours of Supervisor time) = **643 hours**

**Annual Cost:** 643 (hours) × \$41.08 (Supervisor wage) = **\$26,414**

## 8. Medical Removal

### **§1910.1024 (l)(1) and (2) --Medical removal.**

(1) An employee is eligible for medical removal, if the employee works in a job with airborne exposure at or above the action level and either:

(i) The employee provides the employer with:

(A) A written medical report indicating a confirmed positive finding or CBD diagnosis; or

(B) A written medical report recommending removal from airborne exposure to beryllium in accordance with paragraph (k)(5)(v) or (k)(7)(ii) of this standard; or

(ii) The employer receives a written medical opinion recommending removal from airborne exposure to beryllium in accordance with paragraph (k)(6)(v) or (k)(7)(iii) of this standard.

(2) If an employee is eligible for medical removal, the employer must provide the employee with the employee's choice of:

(i) Removal as described in paragraph (l)(3) of this standard; or

(ii) Remaining in a job with airborne exposure at or above the action level, provided that the employer provides, and ensures that the employee uses, respiratory protection that complies with paragraph (g) of this standard whenever airborne exposures are at or above the action level.

In accordance with the spreadsheets for the PEA, there are 446 employees<sup>3</sup> who will request medical removal because of a positive finding of CBD. OSHA estimates that it will take five minutes (0.08 hour) of a Supervisor's time to receive and process (including conveying the two options under (l)(2)) for each medical removal request. OSHA anticipates that this will typically involve the employee authorizing that the PLHCP share a recommendation for removal with the employer. Baseline non-compliance with this requirement is estimated to be 100 percent.

**Burden hours:** 446 employees x 1 (non-compliance) x 0.08 hours = **36 hours**

**Cost:** 36 hours x \$41.08 (Supervisor wage) = \$1,479

---

<sup>3</sup> In the current ICR, there are 778 affected employees. Under the ICR tab of the proposed spreadsheet, there are 332 employees in construction and maritime being removed which leaves 446 employees in general industry affected.

### C. Recordkeeping

#### 1. Exposure Assessment.

#### **§1910.1024 (n)(1)(i), (ii), & (iii) -- Recordkeeping --Air Monitoring Data.**

##### *a. Initial Exposure Monitoring (paragraph (d)(2) of §1910.1024)*

As determined under Initial Exposure Monitoring, paragraph (d)(2), the Agency estimates there are 14,309 exposure monitoring records being generated for this purpose. The Agency estimates that an HR manager will spend 15 minutes (0.25 hours) developing and maintaining records for employee records at a loaded hourly wage of \$70.44, which includes time to notify employees of the results of the exposure monitoring (typically accomplished by posting the results).<sup>[15]</sup> Baseline non-compliance with this requirement is estimated to be 96 percent. The burden hours and cost associated with these provisions are:

**Burden hours:** 10,864 (workers sampled) × 0.96 (non-compliance rate) × 0.25 (hours of HR Manager time) = **2,607 hours**

**One-Time Cost:** 2,607 (hours) × \$72.42 (HR Manager wage) = **\$188,799**

##### *b. Periodic Exposure Monitoring (paragraph (d)(3) of §1910.1024)*

As determined under Periodic Exposure Monitoring, paragraph (d)(3), the Agency estimates there are 8,667 periodic monitoring samples being developed.<sup>[16]</sup> The Agency estimates that an HR manager will spend 15 minutes (0.25 hours) developing and maintaining employee monitoring records at a loaded hourly wage of \$72.42, which includes time to notify employees of the results of the exposure monitoring (typically accomplished by posting the results). Baseline non-compliance with this requirement is estimated to be 96 percent. The burden hours and cost associated with these provisions are:

**Burden hours:** 4,960 (workers sampled per year) × 0.96 (non-compliance rate) × 0.25 (hours of HR Manager time) = **1,190 hours**

**Annual Cost:** 1,190 (hours) × \$72.42 (HR Manager wage) = **\$86,180**

##### *c. Additional Exposure Monitoring (paragraphs (d)(4) of § 1910.1024)*

---

<sup>[15][15]</sup> Where exposures exceed the TWA PEL or STEL, the written exposure monitoring notification shall include suspected or known sources of exposure and the corrective action(s) the employer has taken or will take to reduce exposure to or below the PELs, and where feasible corrective action exists but had not been implemented when the monitoring was conducted.

<sup>[16][16]</sup> As discussed earlier, OSHA has estimated burdens and costs for all affected employers to conduct initial exposure monitoring rather than relying on objective data. OSHA has therefore overestimated the burden and costs for employers to the extent that any employers have developed and maintained objective data that meet the proposed standard's requirements and do not need to conduct initial exposure monitoring or subsequent periodic monitoring.

Of the number of at risk workers subject to initial monitoring, 10,864 workers (see previous paragraph, Initial Monitoring), OSHA estimates 10%, 1,087 workers, will require additional monitoring resulting from changes in the production process, materials, equipment, personnel, work practices, or control methods. The Agency estimates that an HR manager will spend 15 minutes (0.25 hours) maintaining the relevant records at a loaded hourly wage of \$72.42, which includes time to notify employees of the results of the exposure monitoring. Baseline non-compliance with this requirement is estimated to be 96 percent. The burden hours and cost associated with these provisions are:

**Burden hours:** 1,087 (workers sampled) (workers sampled per year)  $\times$  0.96 (non-compliance rate)  $\times$  0.25 (hours of HR Manager time) = **261 hours**

**Annual Cost:** 261 (hours)  $\times$  \$72.42 (HR Manager wage) = **\$18,902**

## 2. Medical Surveillance

### **1910.1024 (n)(3) (i), (ii), & (iii) -- Recordkeeping-- Medical Surveillance.**

In the proposed paragraph (n)(3)(i), the employer must make and maintain a record for each employee covered by medical surveillance under paragraph (k) of this standard.

#### *a. Human Resource manager*

A Human Resource manager would expend 15 minutes (.25 hour) to read, copy the PLHCP's opinion, provide and discuss the opinion with the employee, and discuss any necessary post-exam consultation with the employee. The number of post-exam records is 14,607; also there are 920 referral exam records<sup>[17]</sup> for a total of 15,527. Baseline non-compliance with this requirement is estimated to be 96 percent.

**Burden hours:** 15,527(exam records)  $\times$  0.96 (non-compliance rate)  $\times$  0.25 (hours of HR Manager time) = **3,726 hours**

**Annual Cost:** 3,726 (hours)  $\times$  \$72.42 (HR Manager wage) = **\$269,837**

#### *b. Clerical Worker Time*

Each file would require 5 minutes (0.08 hours) of a clerical worker's time to generate and maintain. The total number of medical exam records per year is 15,527. Baseline non-compliance with this requirement is estimated to be 96 percent.

**Burden hours:** 15,527 (exam records)  $\times$  0.96 (non-compliance rate)  $\times$  0.08 hours = **1,192 hours**

---

<sup>[17][17]</sup> Under the Medical Surveillance section of Item 12, the Agency estimates there are 690 referral examinations where workers travel on average 12 hours to a CBD Diagnostic Center; and 230 referral examinations where employees travel on average 4.25 hours to the CBD Diagnostic center.



**Annual Cost:** 1,192 hours × \$22.53 (Clerical worker wage) = **\$26,856**

### 3. Training

#### **§1910.1024 (n)(4)(i) & (ii) -- Recordkeeping -- Training.**

Paragraph (n)(4)(i) requires the employer to prepare a record of the training. This record must be maintained for three years after the completion of training.

OSHA estimates that there are 43,457 employees that will require a training record to be generated and maintained. A clerical worker will take 5 minutes (0.08 hours) to prepare and maintain these records for each employee receiving training. Baseline non-compliance with this requirement is estimated to be 57 percent.

**Burden hours:** 43,457 (training records) × .57 (non-compliance rate) × 0.08 (hours of Clerical worker time) = 1,982 **hours**

**Annual Cost:** 1,982 (hours) × \$22.53 (Clerical worker wage) = **\$44,654**

### 4. Fit Testing Records

Under the respiratory protection program, the employer must keep records of all respirator fit testing for every employee affected. OSHA estimates that there are 650 employees that will be fit tested for respirators. A clerical workers will have generate and maintain these records. It will take a clerical worker 5 minutes (0.08 hours) to prepare and maintain these records for each employee being tested. The baseline for non-compliance is estimated a100 percent.

**Burden hours:** 650 (fit testing records) × 1 (non-compliance rate) × 0.08 (hours of Clerical worker time) = **52 hours**

**Cost:** 52 (hours) × \$22.53 (Clerical worker wage) = **\$1,172**

## **D. Access to Records**

### 1. Employee Access to Written Exposure Control Plan 1910.1024(f)(iii)

The employer must make a copy of the exposure control plan accessible to each employee who is or can reasonably be expected to be exposed to airborne beryllium in accordance with OSHA's Access to Employee Exposure and Medical Records (Records Access) standard (29 CFR 1910.1020(e)).

OSHA estimates it takes 5 minutes (0.08 hours) of a clerical worker's time to make the exposure control plan accessible to the worker. OSHA estimates that approximately 5% of the 50,261 at-risk workers, or 2,513 workers, will request access to their records per year. Baseline non-compliance with this requirement is estimated to be 62 percent.

**Burden hours:** 2,513 (worker requests for medical documentation)  $\times$  0.62 (non-compliance rate)  $\times$  0.08 (hours of Clerical worker time) = **125 hours**

**One-Time Cost:** 125 (hours)  $\times$  \$22.53 (Clerical worker wage) = **\$2,816**

2. Employee Access to Exposure Monitoring and Medical Records

**§1910.1024 (n)(5) -- Employee Access to Records.**

Upon request, the employer must make all records maintained as a requirement of this standard available for examination and copying to the Assistant Secretary, the Director, each employee, and each employee's designated representative(s) in accordance the Records Access standard (29 CFR 1910.1020). Employers must maintain exposure records and make them available in accordance with 29 CFR 1910.1020.

OSHA estimates that approximately 5% of the 50,261 at-risk workers, or 2,513 workers, will request access to their records per year. OSHA estimates that it takes 5 minutes (0.08 hours) of a Clerical worker's time to disclose these records. Baseline non-compliance with this requirement is estimated to be 100 percent. The annual burden hours and cost for this task are estimated to be:

**Burden hours:** 2,513 (worker requests for medical documentation)  $\times$  1 (non-compliance rate)  $\times$  0.08 (hours of Clerical worker time) = **201 hours**

**Annual Cost:** 201 (hours)  $\times$  \$22.53 (Clerical worker wage) = **\$4,529**

**E. Rule Familiarization**

In the current ICR, the Agency included a one-time familiarization burden of 38,328 hours and cost of \$1,536,186. This accounted for the time a supervisor at each affected employer would spend investigating the details of the rule, and for determining how to implement it. The Agency believes those activities will have been completed by the time the proposed rule is adopted, and therefore the Agency estimates no burden in this ICR for employers in general industry. OSHA estimates that it will take employers in construction and shipyards 6 minutes to review the proposed rule, if it becomes final, to determine that they no longer have recordkeeping obligations under the rule.

***Small establishment (fewer than 20 employees)***

**Burden hours:** 2,399 affected small establishments  $\times$  0.10 (hours of supervisor time) = **240 hours**

**Cost:** 240  $\times$  \$41.08 (Supervisor wage) = **\$9,859**

***Medium establishment (20 to 499 employees)***

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

**Burden hours:** 369 affected medium establishments x 0.10 (hours of supervisor time) =  
**37 hours**

**Cost:** 37 x \$41.08 (Supervisor wage) = **\$1,520**

*Large establishment (500 or more employees)*

**Burden hours:** 28 affected establishments in large establishments x 0.10 (hours of  
supervisor time) = **3 hours**

**Cost:** 3 x \$41.08 (Supervisor wage) = **\$123**

**Total Burden hours:** 240+37+3 = **280**

**Total Cost:** \$9,859+ \$1,520 + \$123 = **\$11,502**

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

**Table B1. Summary of Burden Hours and Cost Under Item 12 of this Supporting Statement**

	Frequency	Basis	Respondent	Responses per Year	Non-Compliance Rate	Hours per Response	Hours per Year	Loaded Hourly Wage	Total Cost	Total Responses
				<i>a</i>	<i>b</i>	<i>c</i>	<i>d = a x b x c</i>	<i>e</i>	<i>f = d x e</i>	<i>g = a x b</i>
<b>A. Exposure Monitoring</b>										
<b>1. Performance Option</b>										
Objective Data	Annual	Employee	Production Worker	0	0%	0.00	0	\$24.16	\$0	0
<b>2. Scheduled Monitoring Option</b>										
Initial	First Year	Employee	Production Worker	10,864	96%	0.50	5,215	\$24.16	\$125,994	10,429
Periodic	Annual	Employee	Production Worker	4,960	96%	0.50	2,381	\$24.16	\$57,525	4,762
Additional	Annual	Employee	Production Worker	1,087	96%	0.50	522	\$24.16	\$12,612	1,044
<b>B. Beryllium Work Areas and Regulated Areas</b>										
<b>1. Written Exposure Control Plan</b>										
Develop Plan	First Year	Establishment	HR Manager	3,076	57%	8.00	14,027	\$72.42	\$1,015,835	1,753
Develop Plan	First Year	Employee	HR Manager	43,457	62%	0.50	13,472	\$72.42	\$975,642	26,943
Update Plan	Annual	Employee	HR Manager	43,457	62%	0.80	21,555	\$72.42	\$1,561,013	26,943
<b>2. Respirator Program</b>										
Develop Plan	First Year	Establishment	HR Manager	465	41%	8.00	1,525	\$72.42	\$110,441	191
Update Plan	Annual	Establishment	HR Manager	465	41%	2.00	381	\$72.42	\$27,592	191
<b>3. Respirator Fit Testing</b>										
Respirator Fit Testing - Labor	Annual	Employee	Production Worker	650	100%	0.50	325	\$24.16	\$7,852	650

**Table B1. Summary of Burden Hours and Cost Under Item 12 of this Supporting Statement**

	Frequency	Basis	Respondent	Responses per Year	Non-Compliance Rate	Hours per Response	Hours per Year	Loaded Hourly Wage	Total Cost	Total Responses
				<i>a</i>	<i>b</i>	<i>c</i>	<i>d = a x b x c</i>	<i>e</i>	<i>f = d x e</i>	<i>g = a x b</i>
Respirator Fit Testing - Labor	Annual	Employee	Supervisor	650	100%	0.50	325	\$41.08	\$13,351	650
<b>4. PPE</b>										
Notify Cleaners in Writing	Annual	Establishment	Clerical	3,076	21%	0.17	110	\$22.53	\$2,478	646
<b>5 Medical Surveillance</b>										
Medical Exam - Initial and Annual	Annual	Employee	Production Worker	14,607	55%	2.08	16,710	\$24.16	\$403,714	8,034
Referral Exam - Travelling Workers	Annual	Employee	Production Worker	690	100%	24.25	16,733	\$24.16	\$404,269	690
Referral Exam - Non-Travelling Workers	Annual	Employee	Production Worker	230	100%	4.25	978	\$24.16	\$23,628	230
<b>6. Information Provided to the PLHCP</b>										
Provide Information - Supervisor	Annual	Employee	Supervisor	14,607	55%	0.25	2,008	\$41.08	\$82,489	8,034
<b>7. Licensed Physician's Written Medical Opinion</b>										
Process Information - Supervisor	Annual	Employee	Supervisor	14,607	55%	0.08	643	\$41.08	\$26,414	8,034
<b>8. Medical Removal</b>										
Medical Removal	First Year	Employee	Supervisor	446	100%	0.08	36	\$41.08	\$1,479	446
<b>C. Recordkeeping</b>										

**Table B1. Summary of Burden Hours and Cost Under Item 12 of this Supporting Statement**

	Frequency	Basis	Respondent	Responses per Year	Non-Compliance Rate	Hours per Response	Hours per Year	Loaded Hourly Wage	Total Cost	Total Responses
				<i>a</i>	<i>b</i>	<i>c</i>	<i>d = a x b x c</i>	<i>e</i>	<i>f = d x e</i>	<i>g = a x b</i>
<b>1. Exposure Monitoring</b>										
Initial	First Year	Employee	HR Manager	10,864	96%	0.25	2,607	\$72.42	\$188,799	10,429
Periodic	Annual	Employee	HR Manager	4,960	96%	0.25	1,190	\$72.42	\$86,180	4,762
Additional	Annual	Employee	HR Manager	1,087	96%	0.25	261	\$72.42	\$18,902	1,044
<b>2. Medical Surveillance</b>										
Medical Surveillance - HR Manager	Annual	Employee	HR Manager	15,527	96%	0.25	3,726	\$72.42	\$269,837	14,906
Medical Surveillance - Clerical	Annual	Employee	Clerical	15,527	96%	0.08	1,192	\$22.53	\$26,856	14,906
<b>3. Training</b>										
Training	Annual	Employee	Clerical	43,457	57%	0.08	1,982	\$22.53	\$44,654	24,770
<b>4. Respirator Fit Testing Records</b>										
Respirator Fit Testing	Annual	Employee	Clerical	650	100%	0.08	52	\$22.53	\$1,172	650
<b>D. Employee Access to Exposure Monitoring and Medical Records</b>										
Written Exposure Control Plan	Annual	Employee	Clerical	2513	62%	0.08	125	\$22.53	\$2,816	1,558
Access to Records	Annual	Employee	Clerical	2,513	100%	0.08	201	\$22.53	\$4,529	2,513
<b>E. Rule Familiarization</b>										
Small	First Year	Establishmen	Supervisor	2,399	100%	0.10	240	\$41.08	\$9,859	2,399

**Table B1. Summary of Burden Hours and Cost Under Item 12 of this Supporting Statement**

	Frequency	Basis	Respondent	Responses per Year	Non-Compliance Rate	Hours per Response	Hours per Year	Loaded Hourly Wage	Total Cost	Total Responses
				<i>a</i>	<i>b</i>	<i>c</i>	<i>d = a x b x c</i>	<i>e</i>	<i>f = d x e</i>	<i>g = a x b</i>
Establishments (< 20 Employees)		t								
Medium Establishments (20 - 499 Employees)	First Year	Establishment	Supervisor	369	100%	0.10	37	\$41.08	\$1,520	369
Large Establishments (≥ 500 Employees)	First Year	Establishment	Supervisor	28	100%	0.10	3	\$41.08	\$123	28
<b>Total</b>										
First Year Extra				71,968			37,162		\$2,429,692	52,987
Annual				185,320			71,400		\$3,077,883	125,017
<b>Year 1 Total</b>				<b>257,288</b>			<b>108,562</b>		<b>\$5,507,575</b>	<b>178,004</b>
<b>Total ICR Three Year Average</b>				<b>209,309</b>			<b>83,787</b>		<b>\$3,887,780</b>	<b>142,679</b>

**Table B2 -- Responses**



Collections of Information	Frequency	Proposed Responses	Current Responses	Requested Change	
				Adjustment	Program change
Objective Data	Annual	0	0	0	0
Initial	First Year	10,429	13,737	0	-3,308
Periodic	Annual	4,762	8,320	0	-3,558
Additional	Annual	1,044	1,374	0	-330
Develop Plan	First Year	1,753	3,347		-1,594
Develop Plan	First Year	26,943	34,065		-7,122
Update Plan	Annual	26,943	34,065		-7,122
Develop Plan	First Year	191	191	0	0
Update Plan	Annual	191	191	0	0
Respirator Fit Testing - Labor	Annual	650	650	0	0
Respirator Fit Testing - Labor	Annual	650	650	0	0
Notify Cleaners in Writing	Annual	646	1,233	0	-587
Medical Exam - Initial and Annual	Annual	8,034	11,768	0	-3,734
Referral Exam - Travelling Workers	Annual	690	1,011	0	-321
Referral Exam - Non-Travelling Workers	Annual	230	337	0	-107
Provide Information - Supervisor	Annual	8,034	11,768	0	-3,734
Process Information - Supervisor	Annual	8,034	11,768	0	-3,734
Medical Removal	First Year	446	778	0	-332
Initial	First Year	10,429	13,737	0	-3,308
Periodic	Annual	4,762	8,320	0	-3,558
Additional	Annual	1,044	1,374	0	-330
Medical Surveillance - HR Manager	Annual	14,906	21,835	0	-6,929
Medical Surveillance - Clerical	Annual	14,906	21,835	0	-6,929

The Agency is proposing to request a decrease in the burden hours of 142,679. The total adjustment is -51,236 (-2,444+ -48,792) and a program change of -52,740.

**13. Provide an estimate of the total annual cost burden to respondents or recordkeepers resulting from the collection of information. (Do not include the cost of any hour burden shown in Items 12 and 14.)**

**The cost estimate should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life) and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information. Include descriptions of methods used to estimate major cost factors including system and technology acquisition, expected useful life on capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.**

**If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collections services should be part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.**

**Generally, estimates should not include purchases of equipment or services, or portions thereof, made: (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.**

1. Exposure Monitoring

The Agency has taken a unit cost for analyzing the samples taken for exposure monitoring. This exposure monitoring requires that three samples be taken per worker: one time-weighted average (TWA) sample and two short-term exposure limit (STEL) samples. The costs differ for initial exposure monitoring (which is conducted by certified IH) and additional/periodic monitoring (which is conducted by a lower wage IH). The unit cost for an initial TWA sample is estimated to be \$591.22, which is the sum of the cost for contract industrial hygienist services (\$440.43) and the associated lab fees (\$150.79). The unit cost to obtain the two STEL samples is estimated to be \$1,182.44 (2 x (\$150.79 + \$440.43)) per sampled worker. The unit cost for additional/periodic TWA samples is estimated to be \$371.01, which is the sum of the cost for contract industrial hygienist services (\$220.22) and the associated lab fees (\$150.79). The unit cost to obtain additional/periodic STEL samples is estimated to be \$742.01 (2 x (\$150.79 + \$220.22)).<sup>[18]</sup>

---

<sup>[18][18]</sup> These exposure monitoring unit costs are summarized in Tables of the PEA SPREADSHEETS.

Table C shows the number of responses per year, non-compliance rate, and total cost associated with each type of exposure monitoring sample. The number of workers affected by the exposure monitoring requirements varies, with 10,864 workers affected in the first year, 4,960 workers subject to periodic exposure monitoring, and 1,087 workers subject to additional exposure monitoring.<sup>[19]</sup> The total cost is calculated by multiplying the number of workers affected by the cost per sample by the non-compliance rate. First-year costs and the costs for each type of sample are summed to arrive at the total costs.

**Table C1. Direct Costs of Exposure Monitoring  
(General Industry Only)**

	Frequency	Responses per Year	Non-Compliance Rate	Non-Compliance Responses per year	Unit Cost	Total Cost
<b>Initial</b>						
TWA Sample	First Year	10,864	96%	10,429	\$591.22	\$6,165,833
2 STEL Samples	First Year	10,864	96%	10,429	\$1,182.44	\$12,331,667
Subtotal	First Year	10,864		10,429		<b>\$18,497,500</b>
<b>Periodic</b>						
TWA Sample	Annual	4,960	96%	4,762	\$371.01	\$1,766,750
2 STEL Samples	Annual	4,960	96%	4,762	\$742.01	\$3,533,452
Subtotal	Annual	4,960		4,762		<b>\$5,300,202</b>
<b>Additional</b>						
TWA Sample	Annual	1,087	96%	1,044	\$371.01	\$387,334
2 STEL Samples	Annual	1,087	96%	1,044	\$742.01	\$774,658
Subtotal	Annual	1,087		1,044		<b>\$1,161,992</b>
<b>Total</b>						<b>\$24,959,694</b>

## 2. Initial Medical Examinations

The Agency assumes that employers will incur an initial medical cost for the exams associated with the medical surveillance provision of the rule. The initial medical cost associated with initial medical exams is \$567.31, which includes \$42.83 for gathering or updating work and medical history, \$128.48 for a full physical exam (encompassing both respiratory and skin requirements), \$60.21 for a pulmonary function test, \$313.77 for a BeLPT, and \$220.19 for all additional tests (collectively) that the PLHCP may recommend. For this last element, the

<sup>[19][19]</sup> The derivation of the number of affected workers described in Section 12 above.

Agency estimates that 10 percent of the standard medical examinations will lead to further tests recommended by the PLCHP.<sup>[20]</sup> The cost for the PLHCP or other medical provider to provide a written medical report to the employee is included in the cost for the medical exams.

The Agency estimates that 14,607 workers will be subject to annual medical surveillance, and OSHA estimates a non-compliance rate of 0.96 (14,023 workers) so the total cost for these workers is \$7,955,388 (14,023 x \$567.31). (See Table C2)The cost for the additional exams is included.

**Table C2 – Medical Exam Costs**

	Frequency	Basis	Unit Cost	Responses per Year	Non-Compliance Rate	Adjusted Responses	Total Cost
Medical Exam Costs	Annual	Employee	\$567.31	14,609	96%	14,023	\$ 7,955,388

**Total Annual Cost: \$7,955,388**

### 3. Respirator Fit-Test Materials

The Agency estimates that it costs employers \$1.22 for respirator materials to fit-test each of the 650 employees. This cost was not significant enough for separate identification in the FEA, but is derived from the respirator fit-test materials costs identified in *the Quantitative Fit Testing Protocol: Amendment to the Final Rule on Respiratory Protection* NPRM Supporting Statement.<sup>[22]</sup>

Annual Cost: 650 (employees) x \$1.22 (cost for materials) = \$793

### 4. Total Capital Costs

The total costs for this item are the sum of the costs for exposure monitoring and medical examinations.

**Total Cost: \$24,959,694+ \$7,955,388 +\$793 = \$32,915,875**

**Table C3 – Annualization of the Proposed Cost**

Three Year Average for the ICR <sup>4</sup>	Cost
---	------

<sup>[20][20]</sup> These exposure monitoring unit costs are summarized in Table V-17 of the FEA.

<sup>[22][22]</sup> *Respiratory Protection QNFT NPRM* supporting statement, published Oct. 7, 2016, available at [https://www.reginfo.gov/public/do/PRAViewDocument?ref\\_nbr=201511-1218-005](https://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=201511-1218-005) , p. 27.

<sup>4</sup> The three year average is calculated by taking the first year costs (initial, annual, and additional exposure monitoring) plus the 2<sup>nd</sup> and 3<sup>rd</sup> year costs (annual and additional exposure monitoring) and dividing the sum by three.

<b>Exposure Monitoring</b>	<b>\$12,628,027</b>
<b>Medical Exams</b>	<b>\$7,955,388</b>
<b>Fit Testing</b>	<b>\$793</b>
<b>Total Cost Average over three years</b>	<b>\$20,584,208</b>

**14. Provide estimates of annualized cost to the Federal Government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information. Agencies may also aggregate cost estimates from Items 12, 13, and 14 in a single table.**

There are no costs to the Federal Government.

**15. Explain the reasons for any program changes or adjustments.**

This is a revision to the existing collection of information. The Agency is proposing both a program change and an adjustment (decrease) to the currently approved Beryllium Information Collection. The proposal would remove the existing collection of information requirements currently applicable to the construction and shipyard sectors. In addition, this revision makes an adjustment in familiarization: it removes familiarization burden and costs that would have already been incurred, and adds burden and cost for shipyard and construction employers to determine that their existing paperwork requirements have been eliminated.

OSHA is proposing to revoke the two comprehensive standards applicable to the construction and shipyard sectors. As a result the number of establishments, workers, exposure monitoring samples would be reduced. This results in a program reduction of -47,371 hours and an adjustment of -38,328 hours, a total reduction of 85,699 hours from 194,261 to 108,562. (See *Table D1 – Requested Changed in Burden Hours*).

For the purposes of this ICR, OSHA is annualizing the burden hours for this package to show the average burden hours over a three year period. The currently approved burden hours of 194,261 when annualized is 131,578, annualized an adjustment decrease of 62,683.

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

Therefore, OSHA is requesting an annualized program change of -15,791 hours, and an annualized adjustment of -32,000 hours, a total reduction in burden of -47,791 hours, from 131,578 hours to 83,787 hours. (See Table D-2, *Annualized Burden Hours for Currently Approved to Requested*)

**Table D1 – Requested Change in Burden Hours**

OSHA is proposing to revoke the two comprehensive standards applicable to the construction and shipyard sectors. As a result the number of establishments, workers, exposure monitoring samples would be reduced.

Collections of Information	Current Burden Hours	Requested Burden Hours	Difference Program Change (PC)/ Adjustment (Adj.)	Explanation
<b>A. Exposure Monitoring</b>				
<b>1. Performance Option</b>				
Objective Data	0	0	0	
<b>2. Scheduled Monitoring Option</b>				
Initial	6,868	5,215	-1,653 (PC)	The number of initial exposure monitoring samples was reduced from 14,309 to 10,864 samples.
Periodic	4,160	2,381	-1,779 (PC)	The total number of periodic exposure monitoring samples was reduced from 8,667 to 4,960 samples.
Additional	687	522	-165 (PC)	The number of additional monitoring samples was reduced from 1,431 to 1,087.
<b>B. Beryllium Work Areas and Regulated Areas</b>				
<b>1. Written Exposure Control Plan</b>				
Develop Plan	26,776	14,024	-12,752 (PC)	The number of establishments at risk from exposure to Beryllium was reduced from 5,872 to 3,076.
Develop Plan	17,032	13,472	-3,560 (PC)	Time to develop plan varies with number of employee. The number of workers at risk was reduced from 54,943 to 43,457.

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

Update Plan	27,252	21,555	-5,698 (PC)	The number of workers at risk was reduced from 54,943 to 43,457.
<b>2. Respirator Program</b>				
Develop Plan	1,525	1,525	0	No Change.
Update Plan	381	381	0	No Change.
<b>3. Respirator Fit Testing</b>				
Respirator Fit Testing - Labor	325	325	0	No Change.
Respirator Fit Testing - Labor	325	325	0	No Change.
<b>4. PPE</b>				
Notify Cleaners in Writing	210	110	-100 (PC)	The number of establishments potentially at risk from exposure to beryllium that will need to send out clothing and equipment for laundering, cleaning, or repair was reduced from 5,872 to 3,076.
<b>5 Medical Surveillance</b>				
Medical Exam - Initial and Annual	24,478	16,710	-7,768 (PC)	The number of employee medical examinations was reduced from 21,397 to 14,607.
Referral Exam - Travelling Workers	24,517	16,733	-7,784 (PC)	The estimated number of annual referrals to the CBD diagnostic center was reduced from 1,011 to 690.
Referral Exam - Non-Travelling Workers	1,432	978	-454 (PC)	The estimated number of annual number referrals exams to the CBD diagnostic center was reduced from 337 to 230.
<b>6. Information Provided to the PLHCP</b>				
Provide Information - Supervisor	2,942	2,008	-934 (PC)	The estimated number of employees that supervisors would



BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

				provide information to the PLHCP on was reduced from 21,397 to 14,607 employees.
<b>7. Licensed Physician’s Written Medical Opinion</b>				
Process Information - Supervisor	941	643	-298 (PC)	The estimated number of written medical opinion employers obtain from the licensed physician was reduced from 21,397 to 14,607.
<b>8. Medical Removal</b>				
Medical Removal	62	36	-26 (PC)	The estimated number employees who will request medical removal because of a positive finding of CBD was reduced from 778 to 446.
<b>C. Recordkeeping</b>				
<b>1. Exposure Monitoring</b>				
Initial	3,434	2,607	-827 (PC)	The estimated number of initial monitoring records was reduced from 14,309 to 10,864.
Periodic	2,080	1,190	-890 (PC)	The estimated number of periodic monitoring records was reduced from 8,667 to 4,960.
Additional	343	261	-82 (PC)	The number of additional monitoring samples was reduced from 1,431 to 1,087.
<b>2. Medical Surveillance</b>				
Medical Surveillance - HR Manager	5,459	3,726	-1,733 (PC)	The number medical records employer (human resource manager) must make and maintain for each employee was reduced from 22,745 to 15,527.
Medical Surveillance - Clerical	1,747	1,192	-555 (PC)	The number medical records employer (clerical) must make and maintain for each employee was reduced from 22,745 to 15,527
<b>3. Training</b>				

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

Training	2,505	1,982	-523 (PC)	The number of employee training records was reduced from 54,943 to 43,457.
<b>4. Respirator Fit Testing Records</b>				
Respirator Fit Testing	52	52	0	No change.
<b>D. Employee Access to Exposure Monitoring and Medical Records</b>				
Written Exposure Control Plan	153	125	-28 (PC)	The estimated number of employees requesting access to the Written exposure control plan was reduced from 3,087 to 2,513 requests
Access to Records	247	201	-46 (PC)	The estimated number of employees requesting access to their exposure and/ or medical records was reduced from 3,087 to 2,513 requests.
<b>E. Rule Familiarization</b>				
Small Establishments (< 20 Employees)	22,576	240	-22,576 (Adj.) 240 (PC)	OSHA removed the burden hours for all small establishments to become familiar with the final rule, -22,576 hours. OSHA added burden hours for construction and maritime establishments to familiarize themselves with the NPRM, +240 hours program change, and reduced the familiarization time from 4 hours to 6 minutes.
Medium Establishments (20 - 499 Employees)	12,952	37	12,952 (Adj.) 37 (PC)	OSHA removed the burden hours for all small establishments to become familiar with the final rule, -12,952 hours. OSHA added burden hours for construction and maritime establishments to familiarize themselves with the NPRM, +37 hours program change, and reduced the familiarization time from 8 hours to 6 minutes.

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017

Large Establishments (≥ 500 Employees)	2,800	3	2,800 (Adj.) 3(PC)	OSHA removed the burden hours for all small establishments to become familiar with the final rule, -2,800 hours. OSHA added burden hours for construction and maritime establishments to familiarize themselves with the NPRM, +3 hours program change, and reduced the familiarization time from 40 hours to 6 minutes.
<b>Totals</b>	<b>194,261</b>	<b>108,562</b>	<b>-38,328 (Adj)</b> <b>-47,371 (PC)</b> <b>-85,699 Hours</b>	The agency requests a <i>38,328 adjustment decrease</i> resulting from employers becoming familiar with the January 2017 final rule. The Agency is also requesting <i>a program decrease of -47,371</i> mainly resulting from removing the construction and shipyard sectors from Be standard.

**Table D2 – Annualized Burden Hours for Currently Approved to Requested**

Averaged Over 3 Years	Current Burden Hours	Requested Burden Hours	Difference	
			Adjustment	Program Change
Initial Year + 1 <sup>st</sup> Year Annual	194,261	108,562	-38,328	-47,371
2 <sup>nd</sup> Year Annual	100,236	71,400	-28,836	0
3 <sup>rd</sup> Year Annual	100,236	71,400	-28,836	0
<b>Total Annualized Average</b>	<b>131,578</b>	<b>83,787</b>	<b>-32,000</b>	<b>-15,791</b>

As a result of analyzing the current 194,261 burden hours, there was an *adjustment decrease of 62,683* hours resulting in 131,578 hours.

The currently approved burden hours of 194,261 was adjusted by as a result of annualizing the existing burden hours of 131,578 hours.

*Summary of the Changes in Capital Cost:*

OSHA has adjusted the existing capital cost estimate of \$46,158,266 to \$46,807,743, an adjustment increase of \$649,477. This adjustment increase is due to an increase in the unit costs for samples, lab fees, and medical exams. The unit cost for samples and lab fees increased from \$583.27 to \$591.22 and medical exams increased from \$558.84 to \$567.31.

**Table E – Summary of Cost Adjustment Increase**

Title	Current Cost	Propose Cost Increase (Adjustment)	Adjusted Burden Hours due to Unit cost increases to Exposure Monitoring and Medical Examinations
Exposure Monitoring	\$34,678,341	\$475,494	\$35,153,835
Medical Exams	\$11,479,132	\$173,983	\$11,653,115
Respirator fit Testing Materials	\$793	0	\$793
<b>Total</b>	<b>\$46,158,266</b>	<b>\$649,477 (Adj)</b>	<b>\$46,807,743</b>

**Table F - Annualizing Adjusted Costs:**

OSHA has annualized the existing capital cost estimate of \$46,807,743 to \$30,564,990 annually, an adjustment decrease of \$16,242,753. In addition, due to the removal of construction and maritime, the capital cost estimated for general industry when annualized is \$20,584,209 and the annualized capital cost for removing the construction and maritime industries is a program change decrease of \$9,980,781.

Title	Current Burden Hours with Adjusted Cost Increase	Adjustment Resulting From Annualization	Annualized Costs Over Three-year Period	Cost Savings (Program Change)	Requested Annualized Cost
Exposure Monitoring	\$35,153,835	-\$16,242,753	\$18,911,082	-\$6,283,054	\$12,628,028
Medical Exams	\$11,653,115	\$0	\$11,653,115	-\$3,697,727	\$7,955,388
Respirator fit Testing Materials	\$793	\$0	\$793	\$0	\$793
<b>Total</b>	<b>\$46,807,743</b>	<b>-\$16,242,753</b>	<b>\$30,564,990</b>	<b>-\$9,980,781</b>	<b>\$20,584,209</b>

**16. For collection of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.**

OSHA will not publish the information collected under the proposal.

**17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.**

OSHA lists current valid control numbers in §§1910.8, 1915.8, 1917.4, 1918.4, and 1926.5 and publishes the expiration date in the Federal Register notice announcing OMB approval of the information collection requirement (see 5 CFR 1320.3(f)(3)). OSHA believes that this is the most appropriate and accurate mechanism to inform interested parties of these expiration dates.

**18. Explain each exception to the certification statement.**

OSHA is not requesting an exception to the certification statement.

## **B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS**

This Supporting Statement does not contain any collection of information requirements that employ statistical methods.

BERYLLIUM STANDARD FOR GENERAL INDUSTRY (29 CFR 1910.1024)

1218-0267

June 2017