

OCCUPATIONAL EXPOSURE TO BERYLLIUM AND BERYLLIUM COMPOUNDS
STANDARD IN THE SHIPYARD SECTOR (29 CFR 1915.1024)

1218-0272

July 2020

Note

The Occupational Safety and Health Administration (OSHA) is updating the beryllium standards for the construction and shipyard industries (29 CFR 1926.1124 and 29 CFR 1915.1024, respectively), which contain collections of information that are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (PRA), 44 U.S.C. 3501 *et seq.*, and OMB regulations at 5 CFR part 1320. These standards, and the beryllium standard for general industry (29 CFR 1910.1024), contain collection of information (paperwork) requirements that have been previously approved by OMB. The requirements of all three standards are currently contained in the approved information collections request (ICR) under OMB control number 1218-0267. For purposes of OMB review under the PRA, OSHA has created a new paperwork package containing only those collections of information in the beryllium standard for the shipyard sector. Therefore, the agency is submitting this new ICR for the shipyard sector under OMB Control Number 1218-0272 for OMB approval.

**SUPPORTING STATEMENT FOR
THE INFORMATION COLLECTION REQUIREMENTS
IN THE OCCUPATIONAL EXPOSURE TO BERYLLIUM AND BERYLLIUM
COMPOUNDS STANDARD IN THE SHIPYARD SECTOR (29 CFR 1915.1024)¹
OMB CONTROL NUMBER 1218-0272
(July 2020)**

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 to “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 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)).

¹ The purpose of this Supporting Statement is to analyze and describe the burden hours and costs associated with provisions of the 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.

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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 ensure 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 final rule to revise the occupational exposure to beryllium and beryllium compounds standard for the shipyard sector (29 CFR 1915.1024).

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 revising several collection of information requirements contained in the beryllium standard for the shipyard sector. The final removes and adds language to several collections of information in this information collection request; these changes are described in Table A below.

Table A --- The Changes to the Collection of Information Requirements.

Section number and title	Currently approved collection of information requirements	Action Taken
<p>§1915.1024(f)(1)(i) -- Methods of Compliance -- Written Exposure Control Plan.</p>	<p>The employer must establish, implement, and maintain a written exposure control plan, which must contain:</p> <ul style="list-style-type: none"> (A) A list of operations and job titles reasonably expected to involve 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; (E) Procedures for minimizing the migration of beryllium within or to locations outside the workplace; (F) A list of engineering controls, work practices, and respiratory protection 	<p>Revised paragraph (f)(1)(i) (A) to list operations and job titles reasonably expected to involve exposure to beryllium.</p> <p>Removed paragraphs (f)(1)(i)(B) through (E), the written exposure control plan.</p> <p>Added a new requirement, paragraph (f)(1)(i)(D) to list procedures used to ensure the integrity of each containment used to minimize exposures to employees outside the</p>

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Section number and title	Currently approved collection of information requirements	Action Taken
	<p>required by paragraph (f)(2) of the standard; (G) A list of personal protective clothing and equipment required by paragraph (h) of the standard; and (H) Procedures for removing, laundering, storing, cleaning, repairing, and disposing of beryllium-contaminated personal protective clothing and equipment, including respirators;</p>	<p>containment. Revised paragraph (f)(1)(i) (H) to require a list of procedures for removing, cleaning, and maintaining personal protective clothing and equipment in accordance with paragraph (h) of this standard and renumbered as paragraph (f)(1)(i)(E).</p>
<p>§1915.1024 (f)(1)(ii) (B) -- Methods of Compliance -- Written Exposure Control Plan.</p>	<p>(B) The employer is notified that an employee is eligible for medical removal in accordance with paragraph (l)(1) of this standard, referred for evaluation at a chronic beryllium disease (CBD) diagnostic center, or shows signs or symptoms associated with airborne exposure to or dermal contact with beryllium; or</p>	<p>Removed “airborne” and “or dermal contact with” from paragraph (f)(1)(ii) (B).</p>
<p>§1915.1024(h)(2)(v) -- Personal Protective Clothing and Equipment -- Removal and Storage.</p>	<p>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 the standard and the HCS (29 CFR 1910.1200).</p>	<p>Removed this labeling requirement from the beryllium standard for shipyards and therefore from the ICR.</p>
<p>§1915.1024(h)(3)(iii) -- Personal Protective Clothing and Equipment -- Cleaning and Replacement.</p>	<p>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</p>	<p>Removed this requirement from the beryllium standard for shipyards and therefore from the ICR.</p>

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	handled in accordance with the standard.	
§1915.1024(j)(3) – Housekeeping-- Disposal.	(3) When the employer transfers materials containing beryllium to another party for use or disposal, the employer must provide the recipient with a copy of the warning described in paragraph (m)(2) of this standard.	Removed this requirement from the beryllium standard for shipyards and therefore from the ICR.
§1915.1024 (k)(1)(i)(C) –Medical Surveillance.	Who is exposed to beryllium during an emergency; or	Removed paragraph (k)(1)(i)(C) from the beryllium standard for construction and therefore from the ICR. Renumbered former paragraph (k)(1)(i)(D) as (k)(1)(i)(C).
§1915.1124(k)(2)(i) (B) –Medical Surveillance.	(B) An employee meets the criteria of paragraph (k)(1)(i)(B) or (C) of this standard.	Removed “or (C) of this standard” from paragraph (k)(2)(i)(B) from the beryllium standard for construction and therefore from the ICR.
§1915.1124(k)(2)(ii) – Medical Surveillance.	(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.	Replaced “(D)” with “(C)” in paragraph (k)(2)(ii).
§1915.1124(k)(3)(ii) (A) –Medical Surveillance.	(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;	Revised paragraph (k)(3)(ii) (A) to remove “airborne” and “or dermal contact with” from the text.
§1915.1124(k)(4)(i) -- Information Provided to the PLHCP.	(i) A description of the employee's former and current duties that relate to the employee's airborne exposure and dermal contact with beryllium;	Revised paragraph (k)(4)(i) to remove “airborne” and “and dermal contact with” from the text.
§1915.1024(k)(7) --	The employer must provide an evaluation at	Revised an initial

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<p>Medical Surveillance-- Referral to the CBD Diagnostic Center.</p>	<p>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 either of the events in paragraphs (k)(7)(i)(A) or (B).</p>	<p>consultation with the CBD diagnostic center.</p> <p>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 evaluation at the CBD diagnostic center must be scheduled within 30 days, and must occur within a reasonable time, of:</p> <p>Added a new requirement, paragraph (k)(7)(ii), “The evaluation must include any tests deemed appropriate by the examining physician at the CBD diagnostic center, such as pulmonary function testing (as outlined by the American Thoracic Society criteria), bronchoalveolar lavage (BAL), and transbronchial biopsy. If any of the tests deemed appropriate by the examining physician are not available at the CBD diagnostic center, they may be performed at another location that is mutually agreed upon by the employer and the employee.</p> <p>As result of the changes, OSHA renumbered the</p>

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		subparagraphs in (k)(7).
<p>§ 1915.1024(m)(2) – Warning labels</p>	<p>(2) <u>Warning labels</u>. 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:</p> <p>DANGER CONTAINS BERYLLIUM MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS AVOID CREATING DUST DO NOT GET ON SKIN</p>	<p>Removed this requirement from the beryllium standard for construction and therefore from the ICR.</p>
<p>§ 1926.1124(m)(3)(i) – Employee information and training</p>	<p>(i) For each employee who has, or can reasonably be expected to have, airborne exposure to or dermal contact with beryllium:</p>	<p>Removed “airborne” and “and dermal contact with” from paragraph (m)(3)(i).</p>
<p>§1915.1024(n)(1)(ii)(F) -- Recordkeeping --Air Monitoring Data.</p>	<p>The name, social security number, and job classification of each employee represented by the monitoring, indicating which employees were actually monitored.</p>	<p>Removed the requirement to collect and record social security numbers, as follows:</p> <p>The name and job classification of each employee represented by the monitoring, indicating which employees were actually monitored.</p>
<p>§1915.1024(n)(3)(ii)(B) -- Recordkeeping-- Medical Surveillance.</p>	<p>The record must include the following information about the employee: Name, social security number, and job classification.</p>	<p>Removed the requirement to collect and record of social security numbers, as follows: Name and job classification.</p>
<p>§1915.1024(n)(4)(i) -- Recordkeeping -- Training.</p>	<p>At the completion of any training required by this standard, the employer must prepare a record that indicates the name, social</p>	<p>Removed the requirement to collect and record social security numbers, as</p>

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

Each collection of information requirement contained in the beryllium standard for the shipyard sector is described in detail below.

§ 1915.1024(d) -- Exposure Assessment

§ 1915.1024(d)(2) Performance Option.

(2) Performance option. The employer must assess the 8-hour time-weighted average (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 general purposes of requiring an assessment of airborne exposure to beryllium include: determination of the extent and degree of exposure at the worksite; identification and prevention of employee overexposure; identification of the sources of exposure; 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. Assessment enables employers to meet their legal obligation to ensure that their employees are not exposed in excess of the permissible exposure limit (PEL) and to ensure employees have access to accurate information about their exposure levels, as required by section 8(c)(3) of the Act, 29 U.S.C. 657(c)(3). In addition, exposure data enables the physicians or other licensed health care professionals (PLHCP) performing medical examinations to be informed of the extent of occupational exposures.

The performance option is intended to allow employers flexibility in assessing the beryllium exposures of their employees. Under this option, the employer can use any combination of

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objective data and air monitoring data. Where employers want a more structured approach for meeting their exposure assessment obligations, OSHA also provides the scheduled monitoring option. OSHA takes the burden for the collection of information under the scheduled monitoring option in paragraph (d)(3).

§ 1915.1024(d)(3) Scheduled Monitoring Option.

Initial Monitoring § 1915.1024(d)(3)(i), (ii) & (iii).

(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 monitoring is to determine the extent and degree of beryllium exposure at the worksite; identify and prevent employee overexposure; identify the sources of exposure to beryllium; collect exposure data so that the employer can select the proper control methods to be used; and evaluate 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 PLHCPs performing medical examinations to be informed of the extent of an employee's occupational exposures.

Periodic Monitoring - § 1915.1024(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.

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(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. Periodic monitoring helps employers identify changes in the workplace that influence exposures, and helps employers ensure that workers do not experience exposures that are higher than expected. Periodic monitoring also 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. The standard allows for employers to discontinue monitoring under certain circumstances.

§ 1915.1024(d)(4) Reassessment of Exposure.

(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.

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.

§ 1915.1024(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.

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(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, as well as whether the standard requires them to wear respiratory protection and/or personal protective clothing and equipment. Notification can also permit and encourage workers 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, construction, and maritime.

§1915.1024(e)(2) Regulated Areas

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

Purpose: 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 or STEL, to limit exposure to as few workers as possible, and to remind employees that personal protective equipment (PPE) is required. Establishing a regulated area can help to minimize exposure to workers not directly involved in operations that generate beryllium.

OSHA is not taking burden hours or costs for the regulated areas provision under items 12 and 13 of this Supporting Statement.

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.

§ 1915.1024(f)(1) -- Methods of Compliance -- Written Exposure Control Plan.

§ 1915.1024(f)(1)(i), (ii), & (iii) 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 exposure to beryllium;
- (B) A list of engineering controls, work practices, and respiratory protection required by paragraph (f)(2) of this standard;
- (C) A list of personal protective clothing and equipment required by paragraph (h) of this standard; and

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(D) Procedures used to ensure the integrity of each containment used to minimize exposures to employees outside of the containment.

(E) Procedures for removing, cleaning, and maintaining personal protective clothing and equipment in accordance with paragraph (h) of this standard.

(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 is notified that an employee is eligible for medical removal in accordance with paragraph (l)(1) of this standard, referred for evaluation at a CBD diagnostic center, or shows signs or symptoms associated with airborne exposure to 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: Written exposure control plans are instrumental in ensuring that employers comprehensively and consistently protect employees exposed to beryllium. Requiring employers to articulate conditions resulting in exposure and how those exposures will be controlled will help to ensure that they have a complete understanding of the controls needed to comply with the rule. Even in cases where employees are well trained, the written plan can help to ensure that controls are consistently used and become part of employees' routine skill sets. Employers can also use the plans to ensure that maintenance checks are routinely performed and optimal conditions are maintained. In addition, written exposure control plans are a useful method for communicating protections to employees.

OSHA notes that final paragraph (f) will remove several requirements of the written exposure control plan and will add final paragraph (f)(1)(i)(D), which requires that the written exposure control plan include procedures used to ensure the integrity of each containment used to minimize exposures to employees outside the containment. The purpose of final paragraph (f)(1)(i)(D) is to ensure that any containment used is not compromised such that employees outside of the containment are potentially exposed to beryllium at levels above the TWA PEL or STEL. OSHA believes that this requirement will help ensure that workers not directly involved in beryllium-related work are not exposed to beryllium in excess of the TWA PEL or STEL.

The written exposure control plan needs to be periodically reviewed and, if needed, updated because work conditions can change (e.g., the employer purchases a new type of equipment). A

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written exposure control plan will not likely need to be updated often because employees tend to use the same equipment to perform the same tasks at many locations. However, a yearly review is needed to ensure that all current scenarios are captured in the plan.

Requiring the plan to be accessible also serves an important purpose. Written exposure control plans are effective methods for communicating protections to employees. Making the written plan accessible empowers and protects employees by providing them with written information about sources of exposure, controls, and personal protective clothing and equipment, as well as certain other procedures to minimize employee exposure.

§ 1915.1024(g)(2) – Respiratory protection -- Respiratory protection program.

(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 respiratory protection program will ensure that respirators are properly used in the workplace and are effective in protecting employees. As required under 29 CFR 1910.134(c)(1), employers providing employees with respiratory protection pursuant to the beryllium standard must establish a written respiratory protection program. This written program must include: procedures for selecting respirators for use in the workplace; medical evaluations of employees required to use respirators; fit-testing procedures for tight-fitting respirators; procedures for proper use of respirators in routine and reasonably foreseeable emergency situations; procedures and schedules for maintaining respirators; procedures to ensure adequate quality, quantity, and flow of breathing air for atmosphere-supplying respirators; training of employees in respiratory hazards to which they might be exposed and the proper use of respirators; and procedures for evaluating the effectiveness of the program.

§ 1915.1024(h)(2)(v) -- Personal Protective Clothing and Equipment -- Removal and Storage – REMOVED

(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).

§1915.1024(h)(3)(iii) --Personal Protective Clothing and Equipment -- Cleaning and Replacement -- REMOVED

(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

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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.

OSHA is removing paragraphs (h)(2)(v) and (h)(3)(iii) from the standard. Paragraph (h)(2)(v) requires that PPE removed from the workplace for laundering, cleaning, maintenance, or disposal be placed in closed, impermeable bags or containers labeled in accordance with paragraph (m)(3) of the shipyard standard, as well as the Hazard Communication standard. Paragraph (h)(3)(iii) requires employers to inform, in writing, any person or business entity who launders, cleans, or repairs PPE required by the standards of the potentially harmful effects of exposure to airborne beryllium and dermal contact with beryllium, and of the need to handle the PPE in accordance with the standards. Because these labeling requirements would be removed from the beryllium standard for shipyards, they would create no paperwork burden and would be removed from the ICR.

§ 1915.1024(j)(3) – Housekeeping – Disposal – REMOVED

(3) When the employer transfers materials containing beryllium to another party for use or disposal, the employer must provide the recipient with a copy of the warning described in paragraph (m)(3) of this standard.

OSHA is removing paragraph (j)(3) of the standard, which requires that, when transferring beryllium-containing materials to another party for use or disposal, employers provide the recipient a copy of the warning label currently required by paragraph (m)(3). As part of this final, OSHA is also removing the labeling requirement in paragraph (m)(3). Because there was no burden associated with this item, its removal has no impact on the paperwork burden.

§ 1915.1024(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;
- or
- (C) 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:

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- (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).

- (ii) At least every two years thereafter for each employee who continues to meet the criteria of paragraph (k)(1)(i)(A), (B), or (C) 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 exposure to 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 (FEV₁);
 - (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 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

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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 inclusion of medical surveillance requirements in the shipyard standard 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. Nearly all of OSHA's health standards include medical surveillance requirements.

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 will 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 requirement to offer an examination to employees who show signs or symptoms of CBD or other beryllium-related health effects is necessary because the risk of material impairment of health remains significant at the action level. Consequently, even employees exposed at the action level for fewer than 30 days in a year may be at risk of developing CBD and other beryllium-related diseases and adverse health effects. In addition, beryllium sensitization and CBD could develop in employees who are especially sensitive to beryllium, may have been unknowingly exposed, or may have been exposed to greater amounts than the exposure assessment suggests. By requiring covered employers to make a medical exam available when an employee exhibits signs or symptoms, the standard protects all employees who may have developed CBD, including employees who have been exposed to beryllium for less than 30 days a year above the action level.

The requirement to offer an examination to employees whose most recent written medical opinion recommends periodic medical surveillance is critical to ensure the evaluation of those workers who have been identified by a PLHCP as in need of further evaluation, but may not otherwise meet a trigger for medical surveillance under paragraphs (k)(1)(i)(A) or (B).

The requirement to offer a medical examination at least every two years after the initial examination to employees who continue to meet the criteria is intended to facilitate the detection of health effects at an early stage so that interventions can be taken to improve health. The requirement to offer an examination at termination under the specified circumstances is intended to ensure that no employee terminates employment while carrying a detectable, but undiagnosed, health condition related to beryllium exposure.

The specified contents of the examination are those that are necessary for the PLHCP to opine on any recommended limitations on the employee's use of respirators, protective clothing, or equipment or on the employee's airborne exposure to beryllium and whether the employee has

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any detected medical condition, such as CBD or beryllium sensitization, or any medical conditions related to airborne exposure that require further evaluation or treatment. The provision for “any other tests deemed appropriate” gives the examining PLHCP the flexibility to determine additional tests that are medically necessary and related to beryllium exposure. This flexibility is needed because there are no tests beyond those listed in paragraphs (k)(3)(ii)(A)–(E) that are necessarily applicable to all employees covered by the medical surveillance requirement.

§ 1915.1024(k)(4) Information Provided to the PLHCP.

(4) Information provided to the PLHCP. 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 exposure to 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: The information required to be provided to the PLHCP and, when applicable, the CBD diagnostic center, 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 will also assist the PLCHP in determining if a condition may be related to beryllium exposure.

§ 1915.1024(k)(5)(i), (ii), and (iii) Licensed Physician’s Written Medical Report for the Employee.

(5) Licensed physician’s written medical report for the employee. 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

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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).

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 will also be able to provide the written medical report to future health care providers. The preparation of the report is accounted for under Item 13, cost to the employer for an employee's medical examination.

§ 1915.1024(k)(6) Licensed Physician's Written Medical Opinion for the Employer.

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(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 in the shipyard standard 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 is 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

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allow the employer to take any necessary protective measures in a timely manner. The requirement that the opinion be in written form ensures 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.

§ 1915.1024(k)(7)(i), (ii), (iii), & (iv) 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 evaluation at the CBD diagnostic center must be scheduled within 30 days, and must occur within a reasonable time, 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 evaluation must include any tests deemed appropriate by the examining physician at the CBD diagnostic center, such as pulmonary function testing (as outlined by the American Thoracic Society criteria), bronchoalveolar lavage (BAL), and transbronchial biopsy. If any of the tests deemed appropriate by the examining physician are not available at the CBD diagnostic center, they may be performed at another location that is mutually agreed upon by the employer and the employee.

(iii) 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.

(iv) 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 paragraph (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.

(v) 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.

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Purpose: Evaluation at a CBD diagnostic center allows employees who are confirmed positive or diagnosed with CBD to receive specialized evaluation to determine the appropriate tests to monitor for possible progression from sensitization to CBD and to monitor the progression of CBD if it does occur. The requirements in (k)(7)(ii), (iii), and (iv) regarding the written medical report and written medical opinion serve the purposes described above in the discussions of (k)(5) and (k)(6).

§ 1915.1024(l)(1) & (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: Medical removal, generally, serves three main purposes. First, it increases employee participation and confidence in the standard's medical surveillance program. Second, by requiring the employer to remove employees with the highest risk of suffering material impairment of health (if the employee chooses removal), MRP may benefit sensitized employees and those with CBD. Finally, MRP may provide employers with an additional incentive to keep employee exposures low.

The provisions in paragraphs (l)(1) and (l)(2) 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 in accordance with paragraph (k)(5)(v), (k)(7)(ii), (k)(6)(v), or (k)(7)(iii) of this standard. By making employees eligible for removal when a written medical report indicates a confirmed positive finding or CBD diagnosis or recommends removal from airborne exposure to beryllium

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based on a CBD diagnosis or a confirmed positive finding, the standard offers protection to employees who could benefit from such removal. The same protection is offered to employees for whom the written medical opinion contains, with their authorization, a recommendation for medical removal in accordance with paragraph (k)(6)(v) or (k)(7)(iii). 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 and maintaining the employee's privacy.

§ 1915.1024(m) -- Communication of hazards.

§ 1915.1024(m)(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)(3) of this standard.

Purpose: The purpose of ensuring that each employee has training and access to labels and safety data sheets is to enable workers to take the precautions necessary to implement special practices to prevent or reduce beryllium exposure.

Requirements that employers provide training to workers, both in paragraph (m)(1)(ii) and elsewhere, such as in paragraph (m)(3), are not collections of information. Further, the burden for the requirement to comply with the HCS is taken in the HCS under OMB control number 1218-0072.

§ 1915.1024(m)(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
PERSONAL 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 the 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 has therefore determined that § 1915.1024(m)(2) is not a collection of information.

§ 1915.1024(m)(3) – Warning labels – REMOVED

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

OSHA is removing paragraph (m)(3), which requires specific language for warning labels applied to bags and containers of PPE and other materials contaminated with beryllium. This is

consistent with OSHA's removal of the corresponding requirements to provide such warning labels. As explained above with regard to paragraphs (h)(2)(v) and (j)(3), OSHA is proposing to remove the requirements to label PPE removed from the workplace for laundering, cleaning, maintenance, or disposal as well as beryllium-containing material being transferred to another party for use or disposal. Because there was no burden associated with this item, its removal has no impact on the paperwork burden.

§ 1915.1024(m)(3) – Employee information and training.²

§ 1915.1024(m)(3)(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 costs for this requirement.

§ 1915.1024(n) -- Recordkeeping.

§ 1915.1024(n)(1)(i), (ii), & (iii) -- 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

² As a result of the deleting paragraph (m)(3) of the 2017 final standard for shipyards, OSHA is renumbering paragraph (m)(4) in the shipyards standard as (m)(3), and revising the reference in paragraph (m)(1)(ii) accordingly.

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(F) The name 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).

Purpose: OSHA believes that 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. 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 standards. 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 occupational hazards related to beryllium exposure. The records will allow interested parties to determine if existing controls are protecting workers or whether additional controls are necessary to provide the required protection. These records also allow OSHA to ascertain whether employers are complying with the standards, thereby ensuring that workers are receiving adequate protection from occupational exposure to beryllium and beryllium compounds.

OSHA's deletion of the requirement, in paragraph (n)(1)(ii)(F), to include employees' social security numbers (SSNs) in the records of air monitoring data, does not change costs or burden hours.

§ 1915.1024(n)(2)(i), (ii), & (iii) -- 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).

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Purpose: The records of objective data required under paragraph (n)(2) 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. 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 objective 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 requirements of the standard, thereby ensuring that workers are receiving adequate protection from beryllium exposure.

There is no burden taken for the items in paragraph (n)(2) because OSHA assumes any burden for the purposes of this Supporting Statement is incurred under the scheduled monitoring option.

§ 1915.1024(n)(3)(i), (ii), & (iii) -- 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 each employee:

(A) Name 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 and 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 standard, 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 standard.

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OSHA's deletion of the requirement, in paragraph (n)(3)(ii)(A), to include employees' SSNs in their medical surveillance records does not change costs or burden hours.

§ 1915.1024(n)(4)(i) & (ii) -- Training.

(i) At the completion of any training required by this standard, the employer must prepare a record that indicates the name 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.

OSHA's deletion of the requirement, in paragraph (n)(4)(i), to include employees' SSNs in their training records does not change costs or burden hours.

§ 1915.1024(n)(5) -- 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 with the Records Access standard (29 CFR 1910.1020).

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

§ 1915.1024(n)(6) -- 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-

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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 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 shipyards 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 proposed standard so as to minimize costs for small businesses where exposure levels are low (*Small Business Advisory Review (SBAR) Panel Report with Appendices A, B, and D. Final Version*³). 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. Table VIII-17 of the Preamble to the 2017 Final Rule (82 FR 2470, 2623) addresses the SBAR Panel recommendations and OSHA's response to those recommendations.

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. OSHA seeks to ensure that the requirements of the final standard offer workers adequate medical surveillance while limiting the costs to employers. In this final rule, a clearer definition of the triggers for medical surveillance has been added. This concern was rooted in the cost of BeLPTs and the

³ <https://www.regulations.gov/searchResults?rpp=25&po=0&s=OSHA-H005C-2006-0870-0345&fp=true&ns=true>

trigger of potential skin contact. For the final rule, the Agency has removed skin contact as a trigger for medical surveillance. OSHA has also reduced the frequency of medical surveillance from annually (in the proposed rule) to biennially in the final rule.

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 shipyards 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.

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.**

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Under paragraph (d)(6) of the 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.

The beryllium standard for shipyards requires that exposure records, paragraph (n)(1)(iii), objective data, paragraph (n)(2)(iii), and medical records, paragraph (n)(3)(iii), be maintained pursuant to OSHA's Records Access standard (29 CFR 1910.1020). Under the records access standard, 29 CFR 1910.1020(d)(1)(i), the medical records for each employee must be preserved and maintained for at least the duration of employment plus 30 years, with certain exceptions (see 29 CFR 1910.1020(d)(1)(i)(A)-(C)). Similarly, under 29 CFR 1910.1020(d)(1)(ii) and (iii), employee exposure records, as well as analyses using exposure or medical records, must be preserved and maintained for 30 years.

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 a final rule establishing new permissible exposure limits and other provisions to protect employees, such as requirements for exposure assessment, respiratory protection, personal protective clothing and equipment, housekeeping, medical surveillance, hazard communication, and recordkeeping for the general industry, construction, and shipyard sectors. OMB approved the collection of information contained in the final rule under OMB Control Number 1218-0267.

On October 8, 2019, OSHA published a proposed rule revising the Occupational Exposure to Beryllium and Beryllium Compounds in Construction and Shipyard Sectors (84 FR 53902) to modify the construction and shipyard standards by clarifying certain provisions to improve and simplify compliance. The 2019 proposal would revise the collection of information contained in

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the construction and shipyard standard approved by OMB by clarifying the written exposure control plan, the cleaning and replacement of personal protection equipment, the housekeeping for the disposal, recycling and reuse of contaminated materials, the frequency for medical examinations for employees who have been exposed to beryllium during an emergency or show signs and symptoms of CBD, the referrals to the CBD diagnostic center and the collection and recording of social security numbers in medical surveillance and recordkeeping. OSHA prepared and submitted two ICRs to OMB under the 2019 proposed rule for review in accordance with 44 U.S.C. 3507(d). OSHA proposed to separate the construction and shipyard sectors from the 2017 Beryllium ICR approved by OMB under OMB Control Number 1218-0267. The three beryllium standards would have separate OMB control numbers for each industry. The collection of information requirements contained in this paperwork package will cover only the beryllium standard for the shipyard sector; therefore, the agency requested a new OMB control number for this ICR.

In accordance with the PRA (44 U.S.C. 3506(c)(2)), OSHA solicited public comments on the collection of information contained in the 2019 proposed rule. OSHA encouraged commenters to submit their comments on the information collection requirements contained in the proposed rule under docket number OSHA-2019-0006, along with their comments on other parts of the proposed rule. In addition to generally soliciting comments on the collection of information requirements, the proposed rule indicated that OSHA and OMB were particularly interested in comments that:

- Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
- Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- Enhance the quality, utility, and clarity of the information to be collected; and
- Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

On November 8, 2019, OMB issued a Notice of Action (NOA) assigning this information collection request a new OMB control number 1218-0272 and stating, "This OMB action is not an approval to conduct or sponsor an information collection under the Paperwork Reduction Act of 1995. This action has no effect on any current approvals. If OMB has assigned this ICR a new OMB Control Number, the OMB Control Number will not appear in the active inventory. For future submissions of this information collection, reference the OMB Control Number provided. OMB is withholding approval at this time. Prior to publication of the final rule, the agency should provide a summary of any comments related to the information collection and their response, including any changes made to the ICR as a result of comments. In addition, the agency must enter the correct burden estimates." OMB filed this comment in accordance with 5

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CFR 1320.11(c). A copy of the proposed ICR is available to the public at <http://www.reginfo.gov/public/do/PRAOMBHistory?ombControlNumber=1218-0272>.

No public comments⁴ were received in response to the proposed ICR submitted to OMB for review. However, the agency received 16 public comments on the proposed rule during the initial comment period. In addition, OSHA held a public hearing on the proposal on December 3, 2019, where the agency heard testimony from several stakeholders (see Document ID 2222; 2223). Participants who filed notices of intention to appear at the hearing were permitted to submit additional evidence and data relevant to the proceedings for a period of 44-days following the hearing. That post hearing comment period closed on January 16, 2020. The record remained open for an additional 15 days, until January 31, 2020, for the submission of final briefs, arguments, and summations. OSHA received 25 timely comments during this rulemaking by the close of the last post hearing comment period of January 31, 2020. The comments submitted in response to the proposed rule and the hearing proceedings did modify the provisions containing collections of information. These responses were considered when OSHA prepared the new shipyard ICR for the final rule. The comments submitted in response to the proposed rule did modify the provisions containing collection of information. These comments were considered when OSHA revised the ICR for the final rule.

Attachment A provides a discussion of the significant public comments related to the final rule's information collection requirements and the agency response.

Attachment B lists the comments sent in response to the proposed rule and the hearing proceedings.

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 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.

⁴ Two commenters submitted comments to docket number OSHA-2019-0006 (see Document ID OSHA-2019-0006-0003; OSHA-2019-0006-0004). The comments did not concern the paperwork requirements but rather addressed other portions of the proposal. Neither comment was submitted during the comment period for the proposed rule, which ended on November 7, 2019.

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.

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.**

RESPONDENT BURDEN-HOUR AND COST BURDEN DETERMINATIONS

The burden hours and cost determinations are based on OSHA's Final Economic Analysis ("FEA") for the final rule, Occupational Exposure to Beryllium and Beryllium Compounds in Construction and Shipyard Sectors. The FEA can be found in section IV of the rule (*see* Docket OSHA-H005C-2006-0870). 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. The non-compliance rates and some assumptions are based on the Supporting Statement for the Information Collection Requirements in the Final Beryllium Standard for General Industry (29 CFR 1910.1024), Construction (29 CFR 1926.1124), and Maritime (29 CFR 1915.1024), published January 9, 2017, and the 2019 PEA (section IV of the rule).⁵

⁵ The 2019 PEA and 2020 FEA tables referenced in this Supporting Statement may be downloaded from www.regulations.gov. The non-compliance rates for the ICR are found under the ICR tab in the 2020 FEA spreadsheets.

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As described in Table IV-4 of the rule, OSHA estimates that there are a total of 2,796 affected employers and a total of 11,486 affected employees that are potentially at risk from exposure to beryllium in the construction and shipyard industries. For the purposes of this ICR, the agency estimates in the shipyard industry that there are 696 establishments affected and 3,086 employees affected.

For the sole purpose of calculating burden hours and costs under the Paperwork Reduction Act, this supporting statement has rounded certain numbers up to obtain the 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.

Wage Rates

The wage rate estimates were updated using data for base wages from the Standard Occupational Classification (SOC), the March 2019 Occupational Employment Statistics survey of the Bureau of Labor Statistics. The agency obtained the wage rates utilizing the median wage for the appropriate occupation and the North American Industry Classification System (NAICS). The SOC has been provided for each occupational title. The wages include a fringe markup (loading factor) of 45.8 percent of base wages. The resulting loaded hourly wages are shown below in Table B.⁶

Table B – Estimated Wage Rates

Job	NAICS	SOC[a]	Occupation	Median Hourly Wage	Fringe Markup Percentage , Total [b]	Loaded Hourly (or Daily) Wage
Production Worker	31-33	51-0000	Production Occupations	\$17.78	45.8%	\$25.92
Human Resources Manager	31-33	11-3121	Human Resources Managers	\$55.29	45.8%	\$80.61
Clerical	31-33	43-4071	File Clerks	\$16.98	45.8%	\$24.76
First Line Supervisor	Various	51-1011	First-Line Supervisors of Production and Operating	\$30.30	45.8%	\$44.18

Sources: U.S. Dept. of Labor, OSHA, Directorate of Standards and Guidance, Office of Regulatory Analysis OSHA, 2020.

[a] 2010 Standard Occupational Classification System. Bureau of Labor Statistics. //www.bls.gov/soc/classification.htm.

⁶ The wage rate information in Table B was derived from Table IV-7 of the PEA.

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[b] BLS, 2019. 45.8 percent represents fringe as a percentage of base wages. BLS reports wages and salaries cost employers \$25.22 while benefit costs were \$11.55.

A. Exposure Monitoring

§1915.1024(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.

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.

§1915.1024(d)(3) Scheduled Monitoring Option.

1. Initial Monitoring

§ 1915.1024(d)(3)(i), (ii), & (iii) Initial Monitoring

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) in cases where several employees perform the same tasks on the same shift and in the same work area.

The total number of workers affected is 3,086. Workers in abrasive blasting (in both construction and shipyards) are estimated to be sampled 20 percent more to account for the failure rate. The number of abrasive blasting worker samples is 3,060 times 120 percent, or 3,703 and the number of welders is 26 worker samples times 1.0 percent or 26. Table IV-2 of the PEA shows Number of Workers Exposed to Beryllium by Affected Application Group, Job Category, and Exposure Range (mg/m³). The number of workers that will be directly subjected to initial monitoring (925) is the number of affected workers in each NAICS, divided by 4

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because there are 4 workers represented by each sample $\{[(3,060 \times 1.20)/4=918]+[(26 \text{ welders} \times 1.0/4=6.5)]=924.5=925\}$. Each sampled production worker will incur 30 minutes (0.5 hours) of lost work time during air monitoring, at an hourly wage rate of \$25.92. Baseline non-compliance with this requirement is estimated to be 96 percent. The burden hours and cost associated with these provisions are:

Burden hours: $925 \text{ (samples)} \times 0.96 \text{ (non-compliance rate)} \times 0.5 \text{ hours (Production worker time)} = \mathbf{444 \text{ hours}}$

One-Time Cost: $444 \text{ (hours)} \times \$25.92 \text{ (Production worker wage)} = \mathbf{\$11,508}$

2. Periodic Exposure Monitoring

§1915.1024(d)(3)(v), (vi), (vii) &(viii) Scheduled Monitoring Option.

Paragraph (d)(3)(v) requires the employer to repeat exposure 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 the employer to repeat such monitoring within three months of the most recent 8-hour TWA exposure monitoring where the most recent exposure monitoring indicates that airborne exposure is above the TWA PEL. Where the most recent (non-initial) exposure monitoring indicates that airborne exposure is below the action level, paragraph (d)(3)(vii) requires the employer to 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 the standard. Finally, where the most recent exposure monitoring indicates that airborne exposure is above the STEL, paragraph (d)(3)(viii) requires the employer to 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).

Workers between the action level and PEL:

For periodic monitoring, the number of samples per year varies depending on whether workers are between the action level and PEL or over the PEL. OSHA estimates that there are 1,534 abrasive blasting workers between action level and PEL after the rule is implemented. These workers between the action level and PEL are sampled twice a year. This number is then divided by four, as one sample covers four workers working in the same area. Finally, this number is multiplied by 120% to account for the sampling failure rate in abrasive blasting. This results in a total of 920 samples for workers between the action level and PEL ($1,534 \text{ workers} \times 2 \text{ samples} \div 4 \text{ workers} \times 120\% \text{ failure rate} = 920$).

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For maritime welders, the calculations are the same except that the number of samples is not multiplied by 120% because this setting does not face the same difficulties with sampling. OSHA estimates that there are 11 welders between action level and PEL after the rule is implemented. These workers between the action level and PEL are sampled twice a year. This number is then divided by four, as one sample covers four workers working in the same area. This results in a total of 5 samples for workers between the action level and PEL ($11 \text{ workers} \times 2 \text{ samples} \div 4 \text{ workers} = 5.5=6$).

Workers above the PEL:

For abrasive blasting workers above the PEL, OSHA estimates that there are 58 workers still exposed above the PEL after the rule is implemented. These workers above the PEL are sampled four times per year (twice as often as workers between the action level and PEL). This number is also divide by four workers per area and multiplied by the 120% failure rate. This results in a total of 191 samples for workers above the PEL ($58 \text{ workers} \times 4 \text{ samples} \div 4 \text{ workers} \times 120\% \text{ failure rate} = 69$).

OSHA estimates that is one welder exposed above the PEL after the rule is implemented. Workers above the PEL are sampled four times per year (twice as often as workers between the action level and PEL). Although there is only one worker, OSHA applies the same estimation method as for other workers, and divides by four workers per area. This results in an estimate of 1 sample for workers above the PEL ($1 \text{ worker} \times 4 \text{ samples} \div 4 \text{ workers} = 1$).

Total samples between action level and PEL and above PEL:

Summing the number of samples for workers between the action level and PEL and over the PEL for both abrasive blasting and welding results in a total of 996 samples ($920 + 69 + 6 + 1 = 996$).

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 (996 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: $996 \text{ (samples)} \times 0.96 \text{ (non-compliance rate)} \times 0.5 \text{ hours (Production worker time)} = \mathbf{478 \text{ hours}}$

Annual Cost: $478 \text{ (hours)} \times \$25.92 \text{ (Production worker wage)} = \mathbf{\$12,390}$

3. Additional Exposure Monitoring

§ 1915.1024(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

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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, 925 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: $925 \times 10\%$ (workers sampled) $\times 1$ (assessment per year) $\times 0.96$ (non-compliance rate) $\times 0.5$ hours (Production worker time) = **44 hours**

Cost: 44 (hours) \times \$25.92 (Production worker wage) = **\$1,140**

4. Employee Notification

§ 1915.1024(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, either 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 Recordkeeping §1915.1024(n)(1). As a result, employee notification does not appear as a separate entry on Table C.

B. Written Exposure Control Plan, Respiratory Protection, Medical Surveillance, and Medical Removal

1. Written Exposure Control Plan

§ 1915.1024(f)(1)(i), (ii), & (iii) -- Methods of Compliance --Written Exposure Control Plan.

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Paragraph (f)(1)(i) requires the employer to establish, implement, and maintain a written exposure control plan containing the information listed in paragraphs (f)(1)(i)(A) through (D). The employer is required, under paragraph (f)(1)(ii), to review and evaluate the effectiveness of each written exposure control plan at least annually and update it as necessary, as described in paragraphs (f)(1)(ii)(A) through (C). Paragraph (f)(1)(iii) requires the employer to 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.

There are 696 affected establishments in the shipyard sector. Table IV-4 of the FEA of the final rule, and specifically the column labeled “Affected Establishments [b],” shows the profile of the total number of affected establishments in abrasive blasting and welding for shipyards needing a written exposure control plan.

a. Developing and Implementing a Written Exposure Control Plan

Baseline to Develop Plan Per-Establishment Costs:

OSHA estimates that 696 establishments have potential exposure to beryllium. The agency estimates a Human Resource (HR) Manager, earning an hourly wage of \$80.61, spends four hours per establishment to develop and implement a written exposure control plan. Baseline non-compliance with this requirement is estimated to be 26 percent.

Burden hours: $696 \text{ (written plans)} \times 0.26 \text{ (non-compliance rate)} \times 4 \text{ hours (HR manager time)} = 724 \text{ hours}$

One-Time Cost: $724 \text{ (hours)} \times \$80.61 \text{ (HR manager wage)} = \$58,362$

OSHA notes that the final rule removes several requirements of the written exposure control plan from paragraph (f) and adds a new final paragraph (f)(1)(i)(D), which requires that the written exposure control plan include procedures used to ensure the integrity of each containment used to minimize exposures to employees outside the containment. The final rule also revises previous paragraph (f)(1)(i)(H), renumbered as paragraph (f)(1)(i)(E), to require the written exposure control plan to include a list procedures for removing, cleaning, and maintaining personal protective clothing and equipment in accordance with paragraph (h) of the standard. Overall, OSHA estimates that developing and implementing the written exposure control plan, with these changes, will require approximately half the amount of time that developing and implementing the written exposure control plan as required in the 2017 final rule. Therefore, OSHA has changed the total number of hours required for development and implementation from 8 hours (the estimate included in the Supporting Statement for the 2017 final) to 4.5 hours (4 hours for the HR Manager to develop the plan and 0.5 hours for the HR manager to implement the plan).

Baseline to Implement Plan Per-Establishment Costs:

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OSHA estimates that 696 establishments have potential exposure to beryllium. The agency estimates a HR Manager, earning an hourly wage of \$80.61, spends 30 minutes (0.5 hours) per establishment to implement a written exposure control plan. Baseline non-compliance with this requirement is estimated to be 26 percent.

Burden hours: $696 \text{ (written plans)} \times 0.26 \text{ (non-compliance rate)} \times 0.5 \text{ hours (HR Manager time)} = \mathbf{91 \text{ hours}}$

Annual Cost: $91 \text{ (hours)} \times \$80.61 \text{ (HR manager wage)} = \mathbf{\$7,336}$

b. 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 3,086 workers at risk with a non-compliance rate of 26%. Managers are estimated to need 0.5 hours per employee to write the plan.

Burden hours: $3,086 \text{ (employees)} \times 0.26 \text{ (non-compliance rate)} \times 0.5 \text{ hours (HR manager time)} = \mathbf{401 \text{ hours}}$

One time Cost: $401 \text{ (hours)} \times \$80.61 \text{ (HR manager wage)} = \mathbf{\$32,325}$

c. Reviewing and Updating the Written Exposure Control Plan; Making the Written Exposure Control Plan Accessible to Employees

Under paragraph (f)(1)(ii), the employer must review 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; the employer is notified that an employee is eligible for medical removal under paragraph (l)(1), is referred for evaluation at a CBD diagnostic center, or shows signs or symptoms associated with airborne exposure to beryllium; or the employer has any reason to believe that new or additional airborne exposures are occurring or will occur.

Under paragraph (f)(1)(iii), 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 D. Access to Records, subsection 1, Employee Access to Written Exposure Control Plan -- § 1915.1024(f)(1)(iii).

OSHA estimates that there are a total of 3,086 employees at risk of exposures at or above the action level annually. Managers are estimated to need 12 minutes (0.2 hours) per affected

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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 26 percent.

Burden hours: 3,086 (employees) × 0.26 (non-compliance rate) × 0.8 hours (HR manager time) = **642 hours**

Annual Cost: 642 (hours) × \$80.61 (HR manager wage) = **\$51,752**

2. Respiratory Protection

§ 1915.1024(g)(2) -- Respiratory protection program.

Under paragraph (g)(2), where the 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). The Respiratory Protection standard, 29 CFR 1910.134(c)(1), requires employers to establish and implement a written respiratory protection program containing worksite-specific procedures. The program must be updated as necessary to reflect changes in workplace conditions that affect respirator use. 29 CFR 1910.134(c)(1)(i)-(ix) lists the information that must be included in the employer's written respiratory protection program.

Develop and Implement Plan

There is a cost per establishment to set up a written respiratory protection 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. OSHA estimates that there are 70 shipyard establishments potentially at risk from exposure to beryllium that could exceed the PEL that must have a respiratory protection plan (10 percent of the 696 shipyard establishments). The agency estimates that it takes an HR Manager eight hours to develop a respiratory protection plan. Baseline non-compliance with this requirement is estimated to be 26 percent.

Burden hours: 70 (Respirator program per establishment) × 0.26 (non-compliance rate) = 18 (Respirator program per establishment affected) × 8.0 hours (HR manager time) = **144 hours**

One-time Cost: 144 hours × \$80.61 (HR manager wage) = **\$11,608**

Update Plan:

OSHA estimates that it takes an HR Manager two hours to update the respiratory protection plan for each of the 70 establishments. Baseline non-compliance with this requirement is estimated to be 26 percent.

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Burden hours: 70 (Respirator program per establishment) x 0.26 (non-compliance rate)
= 18 (Respirator program per establishment affected) × 2 hours (HR manager time) = **36 hours**

Annual Cost: 36 hours × \$80.61 (HR manager wage) = **\$2,902**

3. Respirator Fit Testing

The employer will conduct respiratory fit testing for the 59 shipyard workers⁷ 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 59 workers will need to be fit-tested. The baseline for non-compliance is 100 percent.

Burden hours: 59 (Production workers) x 1.0 (non-compliance rate) × 0.5 hours
(Production worker time) = **30 hours**

Annual Cost: 30 hours × \$25.92 (Production worker wage) = **\$778**

OSHA estimates that it will take a supervisor 30 minutes to fit-test the worker. The baseline for non-compliance is 100 percent.

Burden hours: 59 (Supervisor) x 1.0 (non-compliance rate) × 0.5 hours (Supervisor time) = **30 hours**

Annual Cost: 30 hours × \$44.18 (Supervisor wage) = **\$1,325**

4. Medical Surveillance

§ 1915.1024 (k)(1), (2), and (3) -- Medical Surveillance.

Paragraph (k)(1)(i) 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; or (C) Whose most recent written medical opinion required by paragraph (k)(6) or (k)(7) recommends periodic medical surveillance. Paragraph (k)(1)(ii) requires the employer to ensure that all medical examinations and procedures required by the standard are performed by, or under the direction of, a licensed physician.

In paragraph (k)(2)(i), the employer must provide a medical examination within 30 days of determining that: (A) An employee meets the criteria of paragraph (k)(1)(i)(A), unless the

⁷ The 59 shipyard workers comes from comes from Table IV – 2, *Number of Workers Exposed to Beryllium by Affected Application Group, Job Category, and Exposure Range*, of the PEA and in the 2019 PEA spreadsheets.

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employee has received a medical examination, provided in accordance with the standard, within the last two years; or (B) An employee meets the criteria of paragraph (k)(1)(i)(B). Under paragraph (k)(2)(ii), medical examinations must be provided at least every two years thereafter for each employee who continues to meet the criteria of paragraph (k)(1)(i)(A),(B), or (C). Finally, paragraph (k)(2)(iii) requires provision of a medical exam 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.

Paragraph (k)(3)(i) requires the employer to ensure that the healthcare provider conducting the examination advises the employees 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 examination. Paragraph (k)(3)(ii) specifies the required contents of the medical examination.

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 action level and those showing signs and symptoms (of CBD or other beryllium-related health effects sensitization).

The total number of medical exams needed for the shipyard workers is 1,825. OSHA estimated the examination 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: 1,825 (examinations) x 0.55 (non-compliance rate) x 2.08 hours
(Production worker time) = **2,088 hours**

Biennial Cost: 2,088 hours x \$25.92 (Production worker wage) = **\$54,121**

Note: The agency estimates that 10 percent of the standard medical examinations will lead to further tests recommended by the PLHCP and are included in the cost and time of the employees.

5. Information Provided to the PLHCP

§ 1915.1024 (k)(4) -- Information Provided to the PLHCP.

Paragraph (k)(4) requires the employer to ensure that the examining PLHCP (and the agreed-upon CBD diagnostic center, if an evaluation is required under paragraph (k)(7) of the standard) has a copy of the standard and to provide the following information, if known: a description of the employee's former and current duties that relate to the employee's occupational exposure to

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beryllium; the employee's former and current levels of occupational beryllium 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: $1,825 \text{ (employees)} \times 0.55 \text{ (non-compliance rate)} \times 0.25 \text{ hours}$
(Supervisor time) = **251 hours**

Annual Cost: $251 \text{ (hours)} \times \$44.18 \text{ (Supervisor wage)} = \mathbf{\$11,089}$

6. Licensed Physician's Written Medical Opinion for the Employer

§ 1915.1024(k)(6) -- Licensed Physician's Written Medical Opinion for the Employer.

Paragraph (k)(6)(i) 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 the standard). Paragraph (k)(6)(i) specifies the information that must be included in the written opinion. Paragraph (k)(6)(iv) provides that employers must ensure that the employee who underwent the medical examination receives a copy of the written medical opinion within 45 days of the examination.

There are 1,825 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: $1,825 \text{ (employees)} \times 0.55 \text{ (non-compliance rate)} \times 0.08 \text{ hours}$
(Supervisor time) = **80 hours**

Biennial Cost: $80 \text{ (hours)} \times \$44.18 \text{ (Supervisor wage)} = \mathbf{\$3,534}$

7. Referral to Diagnostic Center

§ 1915.1024(k)(7)(i), (ii), & (iii) – CBD Diagnostic Center.

Under final paragraph (k)(7)(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

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employee. The evaluation at the CBD diagnostic center must be scheduled within 30 days, and must occur within a reasonable time, 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. The baseline is 100 percent for non-compliance.

Referral exams to the CBD Diagnostic Center --Traveling Workers

The estimated annual number of referrals to the CBD diagnostic center is 86. 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: 86 referrals traveling x 1.0 (non-compliance) x 24.25 hours (Production worker time) = **2,086 hours**

Cost: 2,086 hours x \$25.92 (Production worker wage) = **\$54,069**

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

The estimated annual number of referrals exams to the CBD diagnostic center is 29. It will take 4 hours and 15 minutes for each employee to travel to the center in town and complete the medical examination. The baseline is 100 percent for non-compliance.

Burden hours: 29 referrals non travel x 1.0 (non-compliance) x 4.25 hours (Production worker time) = **123 hours**

Cost: 123 hours x \$25.92 (Production worker wage) = **\$3,188**

8. Medical Removal

§1915.1024 (l)(1) and (2) -- Medical removal.

Under paragraph (l)(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.

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Under paragraph (l)(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.

OSHA estimates that there are 89 employees who will request medical removal because of a positive finding of CBD. OSHA also 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: 89 employees x 1.0 (non-compliance) x 0.08 hours (Supervisor time) = 7 hours

Cost: 7 hours x \$44.18 (Supervisor wage) = \$309

C. Recordkeeping

1. Exposure Assessment.

§ 1915.1024 (n)(1)(i), (ii), &(iii) -- Recordkeeping -- Air Monitoring Data.

Under paragraph (n)(1)(i), the employer must make and maintain a record of all exposure measurements taken to assess airborne exposures as required by paragraph (d) of the standard. Paragraph (n)(1)(ii) states the required elements of the exposure measurement records. Under paragraph (n)(1)(iii), employers must ensure that these exposure records are maintained and made available in accordance with the Records Access standard (29 CFR 1910.1020).

a. Initial Exposure Monitoring paragraph (d)(3) of §1910.1024)

As determined under Initial Exposure Monitoring, paragraph (d)(3), the agency estimates there are 925 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 \$80.61, 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: 925 (workers sampled) × 0.96 (non-compliance rate) × 0.25 hours (HR manager time) = 222 hours

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One-Time Cost: $222 \text{ (hours)} \times \$80.61 \text{ (HR manager wage)} = \mathbf{\$17,895}$

b. Periodic Exposure Monitoring (paragraph (d)(3) of §1915.1024)

As determined under Periodic Exposure Monitoring, paragraph (d)(3), the agency estimates there are 996 periodic monitoring samples being developed. 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 \$80.61, 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: $996 \text{ (workers sampled)} \times 0.96 \text{ (non-compliance rate)} \times 0.25 \text{ hours (HR manager time)} = \mathbf{239 \text{ hours}}$

Annual Cost: $239 \text{ (hours)} \times \$80.61 \text{ (HR manager wage)} = \mathbf{\$19,266}$

c. Additional Exposure Monitoring (paragraphs (d)(4) of § 1915.1024)

Of the 925 at risk workers subject to initial monitoring (see previous paragraph, Initial Monitoring), OSHA estimates 10%, 92 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 \$80.61, 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: $92 \text{ (workers sampled)} \times 0.96 \text{ (non-compliance rate)} \times 0.25 \text{ hours (HR manager time)} = \mathbf{22 \text{ hours}}$

Annual Cost: $22 \text{ (hours)} \times \$80.61 \text{ (HR manager wage)} = \mathbf{\$1,773}$

2. Medical Surveillance

§ 1915.1024 (n)(3)(i), (ii), & (iii) -- Recordkeeping-- Medical Surveillance.

Under paragraph (n)(3)(i), the employer must make and maintain a record for each employee covered by medical surveillance under paragraph (k) of the standard. Paragraph (n)(3)(ii) lists the information required to be included in this record. Finally, paragraph (n)(3)(iii) requires employers to ensure that these medical records are maintained and made available in accordance with the Records Access standard (29 CFR 1910.1020).

a. Human Resource Manager

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A Human Resource manager would expend 15 minutes (.25 hour) to copy and read 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 1,825 and the number of referral exam records is 115, for a total of 1,940. Baseline non-compliance with this requirement is estimated to be 96 percent.

Burden hours: $1,940 \text{ (exam records)} \times 0.96 \text{ (non-compliance rate)} \times 0.25 \text{ hours (HR manager time)} = \mathbf{466 \text{ hours}}$

Annual Cost: $466 \text{ (hours)} \times \$80.61 \text{ (HR manager wage)} = \mathbf{\$37,564}$

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 1,940. Baseline non-compliance with this requirement is estimated to be 96 percent.

Burden hours: $1,940 \text{ (exam records)} \times 0.96 \text{ (non-compliance rate)} \times 0.08 \text{ hours (Clerical worker time)} = \mathbf{149 \text{ hours}}$

Annual Cost: $149 \text{ hours} \times \$24.76 \text{ (Clerical worker wage)} = \mathbf{\$3,689}$

3. Training

§ 1915.1024 (n)(4)(i) & (ii) -- Recordkeeping -- Training.

Paragraph (n)(4)(i) requires the employer to prepare a record of any training required by the standard. The record must include the name and job classification of each employee trained, the date the training was completed, and the topic of the training. Under paragraph (n)(4)(ii), this record must be maintained for three years after the completion of training.

OSHA estimates that there are 3,086 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 26 percent.

Burden hours: $3,086 \text{ (training records)} \times 0.26 \text{ (non-compliance rate)} \times 0.08 \text{ hours (Clerical worker time)} = \mathbf{64 \text{ hours}}$

Annual Cost: $64 \text{ (hours)} \times \$24.76 \text{ (Clerical worker wage)} = \mathbf{\$1,585}$

4. Fit Testing Records

As required by §1910.134(m) of the respiratory protection standard, the employer must establish and retain written information regarding medical evaluations, fit testing, and the respirator

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program. This information will facilitate employee involvement in the respirator program, assist the employer in auditing the adequacy of the program, and provide a record for compliance determinations by OSHA.

OSHA estimates that it will take a clerical worker 5 minutes (0.08 hours) making \$24.76 an hour to maintain the records for fit testing a respirator. Baseline non-compliance with this requirement is estimated to be 100 percent.

Burden hours: 59 (employees) x 1 (non-compliance) x 0.08 hours (Clerical worker time)
= **5 hours**

Cost: 5 (hours) x \$24.76 (Clerical worker wage) = **\$124**

D. Access to Records

1. Employee Access to Written Exposure Control Plan -- 1915.1024(f)(1)(iii)

Under paragraph (f)(1)(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 3,086 at-risk workers, or 154 workers, will request access to their records per year. Baseline non-compliance with this requirement is estimated to be 26 percent.

Burden hours: 154 (worker requests for written exposure control plan) × 0.26 (non-compliance rate) x 0.08 hours (Clerical worker time) = **3 hours**

One-Time Cost: 3 (hours) × \$24.76 (Clerical worker wage) = **\$74**

2. Access to Records

§ 1915.1024 (n)(5) -- Employee Access to Records.

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

OSHA estimates that approximately 5% of the 3,086 at-risk workers, or 154 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

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is estimated to be 100 percent. The annual burden hours and cost for this task are estimated to be:

Burden hours: 154 (worker requests for medical documentation) \times 1.0 (non-compliance rate) \times 0.08 (hours of Clerical worker time) = **12 hours**

Annual Cost: 12 (hours) \times \$24.76 (Clerical worker wage) = **\$297**

E. Rule Familiarization

The agency expects that the employer will assign responsibility for investigating the details of the final rule, and for determining how to implement it, to one or more supervisors. OSHA estimates that supervisors in small, medium, and large establishments will only require 1 hour to become familiar with the rule, because they already familiarized themselves with the 2017 final rule. OSHA's estimate of familiarization costs reflects the total supervisor familiarization time (cost at a supervisory wage) for each covered employer, with the number of employees at each establishment also serving as a proxy to represent the diversity of beryllium activities. The estimates of the different sizes of affected establishments and the numbers of affected employees are identified in Tables IV-5 of the FEA.

Small establishment (fewer than 20 employees)

Burden hours: 409 affected small establishments \times 1.0 hour (Supervisor time) = 409
hours

Cost: 409 (hours) \times \$44.18 (Supervisor wage) = **\$18,070**

Medium establishment (20 to 499 employees)

Burden hours: 259 affected medium establishments \times 1.0 hour (Supervisor time) = **259
hours**

Cost: 259 (hours) \times \$44.18 (Supervisor wage) = **\$11,443**

Large establishment (500 or more employees)

Burden hours: 27 affected establishments in large establishments \times 1.0 hours
(Supervisor time) = **27 hours**

Cost: 27 (hours) \times \$44.18 (Supervisor wage) = **\$1,193**

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Table C. Summary of Burden Hours and Burden-Hour Cost Under Item 12 for Shipyards

	Frequency	Basis	Respondent	Responses per Year	Non-Compliance Rate	Hours per Response	Hours per Year	Loaded Hourly Wage	Total Cost	Total Responses
				A	B	c	$d = a \times b \times c$	e	$f = d \times e$	$g = a \times b$
A. Exposure Monitoring										
1. Performance Option										
Objective Data	Annual	Employee	Production Worker	0	0%	0.00	0	\$25.92	\$0	0
2. Scheduled Monitoring Option										
Initial	First Year	Employee	Production Worker	925	96%	0.50	444	\$25.92	\$11,508	888
Periodic	Annual	Employee	Production Worker	996	96%	0.50	478	\$25.92	\$12,390	956
Additional	Annual	Employee	Production Worker	92	96%	0.50	44	\$25.92	\$1,140	88
B. Written Exposure Control Plan, Respiratory Protection, Medical Surveillance, and Medical Removal										
1. Written Exposure Control Plan										
Develop Plan	First Year	Establishment	HR Manager	696	26%	4.00	724	\$80.61	\$58,362	181
Implement Plan	Annual	Establishment	HR Manager	696	26%	0.50	91	\$80.61	\$7,336	181
Develop Plan	First Year	Employee	HR Manager	3,086	26%	0.50	401	\$80.61	\$32,325	802
Update Plan	Annual	Employee	HR Manager	3,086	26%	0.80	642	\$80.61	\$51,752	802
2. Respirator Program										
Develop Plan	First Year	Establishment	HR Manager	70	26%	8.00	144	\$80.61	\$11,608	18
Update Plan	Annual	Establishment	HR Manager	70	26%	2.00	36	\$80.61	\$2,902	18
3. Respirator Fit Testing										
Respirator Fit Testing - Labor	Annual	Employee	Production Worker	59	100%	0.50	30	\$25.92	\$778	59
Respirator Fit Testing - Labor	Annual	Employee	Supervisor	59	100%	0.50	30	\$44.18	\$1,325	59
4. Medical Surveillance										

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	Frequency	Basis	Respondent	Responses per Year	Non-Compliance Rate	Hours per Response	Hours per Year	Loaded Hourly Wage	Total Cost	Total Responses
				A	B	c	$d = a \times b \times c$	e	$f = d \times e$	$g = a \times b$
Medical Exam - Initial and Periodic	Biennial	Employee	Production Worker	1,825	55%	2.08	2,088	\$25.92	\$54,121	1,004
5. Information Provided to the PLHCP										
Provide Information - Supervisor	Biennial	Employee	Supervisor	1,825	55%	0.25	251	\$44.18	\$11,089	1,004
6. Licensed Physician's Written Medical Opinion										
Process Information - Supervisor	Biennial	Employee	Supervisor	1,825	55%	0.08	80	\$44.18	\$3,534	1,004
7. Referral to Diagnostic Center										
Referral Exam - Travelling Workers	Annual	Employee	Production Worker	86	100%	24.25	2,086	\$25.92	\$54,069	86
Referral Exam - Non-Travelling Workers	Annual	Employee	Production Worker	29	100%	4.25	123	\$25.92	\$3,188	29
8. Medical Removal										
Medical Removal	First Year	Employee	Supervisor	89	100%	0.08	7	\$44.18	\$309	89
C. Recordkeeping										
1. Exposure Monitoring										
Initial	First Year	Employee	HR Manager	925	96%	0.25	222	\$80.61	\$17,895	888
Periodic	Annual	Employee	HR Manager	996	96%	0.25	239	\$80.61	\$19,266	956
Additional	Annual	Employee	HR Manager	92	96%	0.25	22	\$80.61	\$1,773	88
2. Medical Surveillance										
Medical Surveillance	Annual	Employee	HR Manager	1,940	96%	0.25	466	\$80.61	\$37,564	1,862

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Table C. Summary of Burden Hours and Burden-Hour Cost Under Item 12 for Shipyards

	Frequency	Basis	Respondent	Responses per Year	Non-Compliance Rate	Hours per Response	Hours per Year	Loaded Hourly Wage	Total Cost	Total Responses
				A	B	c	$d = a \times b \times c$	e	$f = d \times e$	$g = a \times b$
- HR Manager										
Medical Surveillance - Clerical	Annual	Employee	Clerical	1,940	96%	0.08	149	\$24.76	\$3,689	1,862
3. Training										
Training	Annual	Employee	Clerical	3,086	26%	0.08	64	\$24.76	\$1,585	802
4. Respirator Fit Testing Records										
Respirator Fit Testing	Annual	Employee	Clerical	59	100%	0.08	5	\$24.76	\$124	59
D. Employee Access to Exposure Monitoring and Medical Records										
Written Exposure Control Plan	Annual	Employee	Clerical	154	26%	0.08	3	\$24.76	\$74	40
Access to Records	Annual	Employee	Clerical	154	100%	0.08	12	\$24.76	\$297	154
E. Rule Familiarization										
Small Establishments (< 20 Employees)	First Year	Establishment	Supervisor	409	100%	1.0	409	\$44.18	\$18,070	409
Medium Establishments (20 - 499 Employees)	First Year	Establishment	Supervisor	259	100%	1.0	259	\$44.18	\$11,443	259
Large Establishments (\geq 500 Employees)	First Year	Establishment	Supervisor	27	100%	1.0	27	\$44.18	\$1,193	27
Totals										
First Year				6,486			2,637		\$162,713	3,561

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Table C. Summary of Burden Hours and Burden-Hour Cost Under Item 12 for Shipyards

	Frequency	Basis	Respondent	Responses per Year	Non-Compliance Rate	Hours per Response	Hours per Year	Loaded Hourly Wage	Total Cost	Total Responses
				A	B	c	$d = a \times b \times c$	e	$f = d \times e$	$g = a \times b$
Annual				13,594			4,520		\$199,252	8,101
Biennial				5,475			2,419		\$68,744	3,012
Total				25,555			9,576		\$430,709	14,674
Total ICR Three Year Average				18,494			6,609		\$287,862	10,794

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 \$628.20, which is the sum of the cost for contract industrial hygienist services (\$468.10) and the associated lab fees (\$160.10). The unit cost to obtain the two STEL samples is estimated to be \$1,256.40 (2 x (\$160.10 + \$468.10)) per sampled worker. The unit cost for additional/periodic TWA samples is estimated to be \$390.07, which is the sum of the cost for contract

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industrial hygienist services (\$229.98) and the associated lab fees (\$160.10). The unit cost to obtain additional/periodic STEL samples is estimated to be \$780.15 (2 x (\$160.10 + \$229.98)).⁸

Table D 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 925 workers affected in the first year, 996 workers subject to periodic exposure monitoring, and 92 workers subject to additional exposure monitoring. The total cost is calculated by multiplying the cost per sample by the number of non-compliance responses. First-year costs and the costs for each type of sample are summed to arrive at the total costs.

**Table D. Direct Costs of Exposure Monitoring
 (Shipyards Only)**

	Frequency	Responses per Year	Non-Compliance Rate	Non-Compliance Responses per year	Unit Cost	Total Cost
Initial						
TWA Sample	First Year	925	96%	888	\$628.20	\$557,842
2 STEL Samples	First Year	925	96%	888	\$1,256.40	\$1,115,683
Subtotal	First Year	925		888		\$1,673,525
Periodic						
TWA Sample	Annual	996	96%	956	\$390.07	\$372,907
2 STEL Samples	Annual	996	96%	956	\$780.15	\$745,823
Subtotal	Annual	996		956		\$1,118,730
Additional						
TWA Sample	Annual	92	96%	88	\$390.07	\$34,326
2 STEL Samples	Annual	92	96%	88	\$780.15	\$68,653
Subtotal	Annual	92		88		\$102,979
Total						\$2,895,234

Total average over three years for the Shipyards sector is:

$$(\$1,673,525/3) + \$1,118,730 + \$102,979 = \$1,779,551$$

⁸ These exposure monitoring unit costs are summarized in the spreadsheets accompanying the PEA for the 2017 rule. (Docket Number: OSHA-H005C-2006-0870-0385).

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 medical cost associated with initial medical exams is \$598.43, which includes \$44.57 for gathering or updating work and medical history, \$133.71 for a full physical exam (encompassing both respiratory and skin requirements), \$63.93 for a pulmonary function test, \$332.84 for a BeLPT, and \$229.98 for all additional tests (collectively) that the PLHCP may recommend. For this last element, the agency estimates that 10 percent of the standard medical examinations will lead to further tests recommended by the PLHCP.⁹ 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 1,825 workers will be subject to biennial medical surveillance, and OSHA estimates a non-compliance rate of 55% (1,004 workers) so the total cost for these workers is \$600,824 (1,004 x \$598.43). (See Table E) The cost for the additional exams is included.

Table E – Medical Exam Costs for Shipyards

	Frequency	Basis	Unit Cost	Responses per Year	Non-Compliance Rate	Adjusted Responses	Total Cost
Medical Exam Costs	Biennial	Employee	\$598.43	1,825	55%	1,004	\$600,824

Total Annual Cost: \$600,824 ÷ 2 = \$300,412

3. Respirator Fit-Test Materials

The agency estimates that it costs employers \$1.27 for respirator materials to fit-test each of the 59 employees.

Annual Cost: 59 (employees) x \$1.27 (cost for materials) = \$75

4. Total Capital Costs

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

Table F1 – Estimated Capital Cost

Total Estimated Capital Cost for Shipyards	Cost
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⁹ The medical exams' unit costs are summarized in OSHA's spreadsheets supporting the 2020 FEA.

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Exposure Monitoring	\$2,895,234
Medical Exams	\$600,824
Respirator Fit Testing Materials	\$75
Total Cost for Shipyards	\$3,496,133

Total Capital Cost is: \$3,496,133

Table F2 – Estimated Annualized Capital Cost

Three Year Average for the ICR (Only Maritime)	
Exposure Monitoring	\$1,779,551
Initial Medical Exam	\$300,412
Respirator Fit Testing Materials	\$75
Total Cost Average over three years for Shipyards	\$2,080,038

Total Capital Cost Annualized is: \$2,080,038

14. Provide estimates of annualized cost to the Federal Government. Also, provide a description 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.

The Occupational Exposure to Beryllium and Beryllium Compounds in Construction and Shipyard Sectors final rule updates the beryllium standards for the construction and shipyard industries. Specifically, the agency is (1) removing provisions in paragraph (n) that require employers to collect and record employees' social security numbers; (2) revising the contents of the written exposure control plan in paragraph (f); (3) removing the requirement in paragraph (j) for employers to provide the recipient with a copy of the warning label when transferring materials containing beryllium to another party for use or disposal; (4) removing certain requirements in paragraph (h) related to written warnings; and (5) clarifying the requirements related to the medical surveillance services provided by CBD diagnostic centers in paragraph (k) (7)(i).

OMB has issued an NOA creating a new ICR for the collections of information in the beryllium standard for the shipyard sector, which are currently approved under OMB control number 1218-0267. This program change request will create a new ICR and a new OMB control number for the shipyard standard on occupational exposure to beryllium. Therefore, the agency is requesting approval for 6,609 total burden hours and the estimated capital cost of \$2,080,038 under OMB Control Number 1218-0272.

16. For collections 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.

The information collected under the beryllium standard for shipyards will not be published.

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.

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