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APPROVED: Félix E. Rivera Torres

Undersecretary of State



Department of State

Government of Puerto Rico

Adoption of Federal Rule
Occupational Exposure to Beryllium and Beryllium
Compound in Construction and Shipyard Sectors

85 FR No. 169– August 31, 2020s

Parts: 10 OSH 1926, 12 OSH 1915

Department of State File:

DEPARTMENT OF LABOR AND HUMAN RESOURCES
PUERTO RICO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
(PR OSHA)

The agency issues the sections under the following authorities: 29 U.S.C. 653, 655, 657; 40 U.S.C. 3704; 33 U.S.C. 941; Secretary of Labor's Order 1-2012 (77 FR 3912 (January 25, 2012)); and 29 CFR part 1911.

Signed at Washington, DC, on August 13, 2020.

Loren Sweatt,

Principal Deputy Assistant Secretary of Labor for Occupational Safety and Health.

Amendments to Standards

For the reasons set forth in the preamble, chapter XVII of title 29, parts 1915 and 1926, of the Code of Federal Regulations is amended as follows:

PART 1915—OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR SHIPYARD EMPLOYMENT

- 1. The authority citation for part 1915 continues to read as follows:

Authority: 33 U.S.C. 941; 29 U.S.C. 653, 655, 657; Secretary of Labor's Order No. 12-71 (36 FR 8754); 8-76 (41 FR 25059), 9-83 (48 FR 35736), 1-90 (55 FR 9033), 6-96 (62 FR 111), 3-2000 (65 FR 50017), 5-2002 (67 FR 65008), 5-2007 (72 FR 31160), 4-2010 (75 FR 55355), or 1-2012 (77 FR 3912); 29 CFR part 1911; and 5 U.S.C. 553, as applicable.

- 2. Amend § 1915.1024 by:

- a. In paragraph (b), add a definition for "Beryllium sensitization" in alphabetical order, revise the definitions for "CBD diagnostic center," "Chronic beryllium disease (CBD)," and "Confirmed positive," and remove the definitions of "Emergency" and "High-efficiency particulate air (HEPA) filter."
- b. Revise paragraph (f)(1)(i)(A).
- c. Remove paragraphs (f)(1)(i)(B), (C), (D), (E), and (H).
- d. Redesignate paragraphs (f)(1)(i)(F) and (G) as paragraphs (f)(1)(i)(B) and (C).
- e. In newly redesignated paragraph (f)(1)(i)(C), remove the word "and" at the end of the paragraph;
- f. Add new paragraphs (f)(1)(i)(D) and (E).
- g. Revise paragraphs (f)(1)(ii)(B), (f)(2), and (g)(1)(iii).
- h. Remove paragraph (g)(1)(iv).
- i. Redesignate paragraph (g)(1)(v) as paragraph (g)(1)(iv).
- j. Revise paragraphs (h)(1) and (2) and (h)(3)(i).
- k. Remove paragraph (h)(3)(iii).
- l. Remove and reserve paragraph (i).
- m. Revise paragraphs (j) and (k)(1)(i)(B).
- n. Remove paragraph (k)(1)(i)(C).
- o. Redesignate paragraph (k)(1)(i)(D) as paragraph (k)(1)(i)(C).
- p. Revise paragraphs (k)(2)(i)(B), (k)(2)(ii), (k)(3)(ii)(A), (k)(4)(i), and (k)(7)(i) introductory text.

- q. Redesignate paragraphs (k)(7)(ii) through (v) as paragraphs (k)(7)(iii) through (vi).
- r. Add a new paragraph (k)(7)(ii).
- s. Revise paragraph (m)(1)(ii).
- t. Remove paragraph (m)(3).
- u. Redesignate paragraph (m)(4) as paragraph (m)(3).
- v. Revise newly redesignated paragraphs (m)(3)(i) introductory text and (m)(3)(ii)(A).
- w. Remove newly redesignated paragraph (m)(3)(ii)(D).
- x. Further redesignate newly redesignated paragraphs (m)(3)(ii)(E) through (I) as paragraphs (m)(3)(ii)(D) through (H).
- z. Revise newly redesignated paragraphs (m)(3)(ii)(D) and (m)(3)(iv) and paragraphs (n)(1)(ii)(F), (n)(3)(ii)(A), and (n)(4)(i).

The revisions and additions read as follows:

§ 1915.1024 Beryllium.

* * * * *

(b) * * *

Beryllium sensitization means a response in the immune system of a specific individual who has been exposed to beryllium. There are no associated physical or clinical symptoms and no illness or disability with beryllium sensitization alone, but the response that occurs through beryllium sensitization can enable the immune system to recognize and react to beryllium. While not every beryllium-sensitized person will develop chronic beryllium disease (CBD), beryllium sensitization is essential for development of CBD.

CBD diagnostic center means a medical diagnostic center that has a pulmonologist or pulmonary specialist on staff and on-site facilities to perform a clinical evaluation for the presence of chronic beryllium disease (CBD). The CBD diagnostic center must have the capacity to perform pulmonary function testing (as outlined by the American Thoracic Society criteria), bronchoalveolar lavage (BAL), and transbronchial biopsy. The CBD diagnostic center must also have the capacity to transfer BAL samples to a laboratory for appropriate diagnostic testing within 24 hours. The pulmonologist or pulmonary specialist must be able to interpret the biopsy pathology and the BAL diagnostic test results.

Chronic beryllium disease (CBD) means a chronic granulomatous lung disease caused by inhalation of airborne beryllium by an individual who is beryllium-sensitized.

Confirmed positive means the person tested has had two abnormal BeLPT test

results, an abnormal and a borderline test result, or three borderline test results from tests conducted within a 3-year period. It also means the result of a more reliable and accurate test indicating a person has been identified as having beryllium sensitization.

* * * * *

(f) * * *

(1) * * *

(i) * * *

(A) A list of operations and job titles reasonably expected to involve exposure to beryllium;

* * * * *

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

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

(ii) * * *

(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 exposure to beryllium; or

* * * * *

(2) *Engineering and work practice controls.* The employer must use engineering and work practice controls to reduce and maintain employee airborne exposure to beryllium to or below the TWA PEL and STEL, unless the employer can demonstrate that such controls are not feasible. Wherever the employer demonstrates that it is not feasible to reduce airborne exposure to or below the PELs with engineering and work practice controls, the employer must implement and maintain engineering and work practice controls to reduce airborne exposure to the lowest levels feasible and supplement these controls by using respiratory protection in accordance with paragraph (g) of this standard.

* * * * *

(g) * * *

(1) * * *

(iii) During operations for which an employer has implemented all feasible engineering and work practice controls when such controls are not sufficient to reduce airborne exposure to or below the TWA PEL or STEL; and

* * * * *

(h) * * *

(1) *Provision and use.* Where airborne exposure exceeds, or can reasonably be expected to exceed, the TWA PEL or STEL, the employer must provide at no cost, and ensure that each employee uses, appropriate personal protective

clothing and equipment in accordance with the written exposure control plan required under paragraph (f)(1) of this standard and OSHA's Personal Protective Equipment standards for shipyards (subpart I of this part).

(2) *Removal of personal protective clothing and equipment.* (i) The employer must ensure that each employee removes all personal protective clothing and equipment required by this standard at the end of the work shift or at the completion of all tasks involving beryllium, whichever comes first.

(ii) The employer must ensure that personal protective clothing and equipment required by this standard is not removed in a manner that disperses beryllium into the air, and is removed as specified in the written exposure control plan required by paragraph (f)(1) of this standard.

(iii) The employer must ensure that no employee with reasonably expected exposure above the TWA PEL or STEL removes personal protective clothing and equipment required by this standard from the workplace unless it has been cleaned in accordance with paragraph (h)(3)(ii) of this standard.

(3) * * *

(ii) The employer must ensure that beryllium is not removed from personal protective clothing and equipment required by this standard by blowing, shaking, or any other means that disperses beryllium into the air.

* * * * *

(j) *Housekeeping.* (1) When cleaning dust resulting from operations that cause, or can reasonably be expected to cause, airborne exposure above the TWA PEL or STEL, the employer must ensure the use of methods that minimize the likelihood and level of airborne exposure.

(2) The employer must not allow dry sweeping or brushing for cleaning up dust resulting from operations that cause, or can reasonably be expected to cause, airborne exposure above the TWA PEL or STEL unless methods that minimize the likelihood and level of airborne exposure are not safe or effective.

(3) The employer must not allow the use of compressed air for cleaning where the use of compressed air causes, or can reasonably be expected to cause, airborne exposure above the TWA PEL or STEL.

(4) Where employees use dry sweeping, brushing, or compressed air to clean, the employer must provide, and ensure that each employee uses, respiratory protection and personal protective clothing and equipment in

accordance with paragraphs (g) and (h) of this standard.

(5) The employer must ensure that cleaning equipment is handled and maintained in a manner that minimizes the likelihood and level of airborne exposure and the re-entrainment of airborne beryllium in the workplace.

(k) * * *

(1) * * *

(i) * * *

(B) Who shows signs or symptoms of CBD or other beryllium-related health effects; or

* * * * *

(2) * * *

(i) * * *

(B) An employee meets the criteria of paragraph (k)(1)(i)(B) of this standard.

(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.

* * * * *

(3) * * *

(ii) * * *

(A) A medical and work history, with emphasis on past and present exposure to beryllium, smoking history, and any history of respiratory system dysfunction;

* * * * *

(4) * * *

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

* * * * *

(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 employee. The evaluation at the CBD diagnostic center must be scheduled within 30 days, and must occur within a reasonable time, of:

* * * * *

(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.

* * * * *

(m) * * *

(1) * * *

(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.

* * * * *

(3) * * *

(i) For each employee who has, or can reasonably be expected to have, airborne exposure to beryllium;

* * * * *

(ii) * * *

(A) The health hazards associated with exposure to beryllium, including the signs and symptoms of CBD;

* * * * *

(D) Measures employees can take to protect themselves from exposure to beryllium;

* * * * *

(iv) 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).

(n) * * *

(1) * * *

(ii) * * *

(F) The name and job classification of each employee represented by the monitoring, indicating which employees were actually monitored.

* * * * *

(3) * * *

(ii) * * *

(A) Name and job classification;

* * * * *

(4) * * *

(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.

* * * * *

PART 1926—SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

Subpart Z—Toxic and Hazardous Substances

■ 3. The authority citation for part 1926, subpart Z, continues to read as follows:

Authority: 40 U.S.C. 3704; 29 U.S.C. 653, 655, 657; and Secretary of Labor's Order No. 12-71 (36 FR 8754), 8-76 (41 FR 25059), 9-83 (48 FR 35736), 1-90 (55 FR 9033), 6-96 (62 FR 111), 3-2000 (65 FR 50017), 5-2002 (67 FR 65008), 5-2007 (72 FR 31160), 4-2010 (75 FR 55355), or 1-2012 (77 FR 3912) as applicable; and 29 CFR part 1911.

Section 1926.1102 not issued under 29 U.S.C. 655 or 29 CFR part 1911; also issued under 5 U.S.C. 553.

■ 4. Amend § 1926.1124 by:

- a. In paragraph (b), add a definition for "Beryllium sensitization" in alphabetical order, revise the definitions for "CBD diagnostic center," "Chronic beryllium disease (CBD)," and "Confirmed positive," and remove the definitions of "Emergency" and "High-efficiency particulate air (HEPA) filter."
- b. Revise paragraph (f)(1)(i)(A).
- c. Remove paragraphs (f)(1)(i)(B), (C), (D), (E), and (H).
- d. Redesignate paragraphs (f)(1)(i)(F), (G), and (I) as paragraphs (f)(1)(i)(B), (C), and (D).
- e. Remove the period at the end of newly redesignated paragraph (f)(1)(i)(D) and add a semicolon in its place.
- f. Add new paragraphs (f)(1)(i)(E) and (F).
- g. Revise paragraphs (f)(1)(ii)(B), (f)(2), and (g)(1)(iii).
- h. Remove paragraph (g)(1)(iv).
- i. Redesignate paragraph (g)(1)(v) as paragraph (g)(1)(iv).
- j. Revise paragraphs (h)(1) and (2) and (h)(3)(ii).
- k. Remove paragraph (h)(3)(iii).
- l. Remove and reserve paragraph (i).
- m. Revise paragraphs (j) and (k)(1)(i)(B).
- n. Remove paragraph (k)(1)(i)(C).
- o. Redesignate paragraph (k)(1)(i)(D) as paragraph (k)(1)(i)(C).
- p. Revise paragraphs (k)(2)(i)(B), (k)(2)(ii), (k)(3)(ii)(A), (k)(4)(i), and (k)(7)(i) introductory text.
- q. Redesignate paragraphs (k)(7)(ii) through (v) as paragraphs (k)(7)(iii) through (vi).
- r. Add a new paragraph (k)(7)(ii).
- s. Remove paragraph (m)(2).
- t. Redesignate paragraph (m)(3) as paragraph (m)(2).
- u. Revise newly redesignated paragraphs (m)(2)(i) introductory text and (m)(2)(ii)(A).
- v. Remove newly redesignated paragraph (m)(2)(ii)(D).
- w. Further redesignate newly redesignated paragraphs (m)(2)(ii)(E) through (I) as paragraphs (m)(2)(ii)(D) through (H).
- x. Revise newly redesignated paragraphs (m)(2)(ii)(D) and (m)(2)(iv) and paragraphs (n)(1)(ii)(F), (n)(3)(ii)(A), and (n)(4)(i).

The revisions and additions read as follows:

§ 1926.1124 Beryllium.

* * * * *

(b) * * *

Beryllium sensitization means a response in the immune system of a specific individual who has been exposed to beryllium. There are no associated physical or clinical symptoms and no illness or disability

with beryllium sensitization alone, but the response that occurs through beryllium sensitization can enable the immune system to recognize and react to beryllium. While not every beryllium-sensitized person will develop chronic beryllium disease (CBD), beryllium sensitization is essential for development of CBD.

CBD diagnostic center means a medical diagnostic center that has a pulmonologist or pulmonary specialist on staff and on-site facilities to perform a clinical evaluation for the presence of chronic beryllium disease (CBD). The CBD diagnostic center must have the capacity to perform pulmonary function testing (as outlined by the American Thoracic Society criteria), bronchoalveolar lavage (BAL), and transbronchial biopsy. The CBD diagnostic center must also have the capacity to transfer BAL samples to a laboratory for appropriate diagnostic testing within 24 hours. The pulmonologist or pulmonary specialist must be able to interpret the biopsy pathology and the BAL diagnostic test results.

Chronic beryllium disease (CBD) means a chronic granulomatous lung disease caused by inhalation of airborne beryllium by an individual who is beryllium-sensitized.

Confirmed positive means the person tested has had two abnormal BeLPT test results, an abnormal and a borderline test result, or three borderline test results from tests conducted within a 3-year period. It also means the result of a more reliable and accurate test indicating a person has been identified as having beryllium sensitization.

* * * * *

(f) * * *

(1) * * *

(i) * * *

(A) A list of operations and job titles reasonably expected to involve exposure to beryllium;

* * * * *

(E) Procedures used to ensure the integrity of each containment used to minimize exposures to employees outside the containment; and

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

(ii) * * *

(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 exposure to beryllium; or

* * * * *

(2) *Engineering and work practice controls.* The employer must use engineering and work practice controls to reduce and maintain employee airborne exposure to beryllium to or below the TWA PEL and STEL, unless the employer can demonstrate that such controls are not feasible. Wherever the employer demonstrates that it is not feasible to reduce airborne exposure to or below the PELs with engineering and work practice controls, the employer must implement and maintain engineering and work practice controls to reduce airborne exposure to the lowest levels feasible and supplement these controls by using respiratory protection in accordance with paragraph (g) of this standard.

* * * * *

(g) * * *

(1) * * *

(iii) During operations for which an employer has implemented all feasible engineering and work practice controls when such controls are not sufficient to reduce airborne exposure to or below the TWA PEL or STEL; and

* * * * *

(h) * * *

(1) *Provision and use.* Where airborne exposure exceeds, or can reasonably be expected to exceed, the TWA PEL or STEL, the employer must provide at no cost, and ensure that each employee uses, appropriate personal protective clothing and equipment in accordance with the written exposure control plan required under paragraph (f)(1) of this standard and OSHA's Personal Protective and Life Saving Equipment standards for construction (subpart E of this part).

(2) *Removal of personal protective clothing and equipment.* (i) The employer must ensure that each employee removes all personal protective clothing and equipment required by this standard at the end of the work shift or at the completion of all tasks involving beryllium, whichever comes first.

(ii) The employer must ensure that personal protective clothing and equipment required by this standard is not removed in a manner that disperses beryllium into the air, and is removed as specified in the written exposure control plan required by paragraph (f)(1) of this standard.

(iii) The employer must ensure that no employee with reasonably expected exposure above the TWA PEL or STEL removes personal protective clothing and equipment required by this

standard from the workplace unless it has been cleaned in accordance with paragraph (h)(3)(ii) of this standard.

(3) * * *

(ii) The employer must ensure that beryllium is not removed from personal protective clothing and equipment required by this standard by blowing, shaking, or any other means that disperses beryllium into the air.

* * * * *

(j) *Housekeeping.* (1) When cleaning up dust resulting from operations that cause, or can reasonably be expected to cause, airborne exposure above the TWA PEL or STEL, the employer must ensure the use of methods that minimize the likelihood and level of airborne exposure.

(2) The employer must not allow dry sweeping or brushing for cleaning up dust resulting from operations that cause, or can reasonably be expected to cause, airborne exposure above the TWA PEL or STEL unless methods that minimize the likelihood and level of airborne exposure are not safe or effective.

(3) The employer must not allow the use of compressed air for cleaning where the use of compressed air causes, or can reasonably be expected to cause, airborne exposure above the TWA PEL or STEL.

(4) Where employees use dry sweeping, brushing, or compressed air to clean, the employer must provide, and ensure that each employee uses, respiratory protection and personal protective clothing and equipment in accordance with paragraphs (g) and (h) of this standard.

(5) The employer must ensure that cleaning equipment is handled and maintained in a manner that minimizes the likelihood and level of airborne exposure and the re-entrainment of airborne beryllium in the workplace.

(k) * * *

(1) * * *

(i) * * *

(B) Who shows signs or symptoms of CBD or other beryllium-related health effects; or

* * * * *

(2) * * *

(i) * * *

(B) An employee meets the criteria of paragraph (k)(1)(i)(B) of this standard.

(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.

* * * * *

(3) * * *

(ii) * * *

(A) A medical and work history, with emphasis on past and present exposure to beryllium, smoking history, and any history of respiratory system dysfunction;

* * * * *

(4) * * *

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

* * * * *

(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 employee. The evaluation at the CBD diagnostic center must be scheduled within 30 days, and must occur within a reasonable time, of:

* * * * *

(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.

* * * * *

(m) * * *

(2) * * *

(i) For each employee who has, or can reasonably be expected to have, airborne exposure to beryllium:

* * * * *

(ii) * * *

(A) The health hazards associated with exposure to beryllium, including the signs and symptoms of CBD;

* * * * *

(D) Measures employees can take to protect themselves from exposure to beryllium;

* * * * *

(iv) 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).

(n) * * *

(1) * * *

(ii) * * *

(F) The name and job classification of each employee represented by the monitoring, indicating which employees were actually monitored.

* * * * *

(3) * * *

(ii) * * *

(A) Name and job classification;

* * * * *

(4) * * *

(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.

* * * * *

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