

**CADMIUM IN CONSTRUCTION STANDARD (29 CFR 1926.1127)
1218-0186
January 2020**

**SUPPORTING STATEMENT FOR THE
INFORMATION COLLECTION REQUIREMENTS IN
THE CADMIUM IN CONSTRUCTION STANDARD (29 CFR 1926.1127)¹
OFFICE OF MANAGEMENT AND BUDGET (OMB)
CONTROL NO. 1218-0186 (January 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). To achieve this objective, the OSH Act specifically authorizes "the development and promulgation of occupational safety and health standards" (29 U.S.C. 651). The Act states further 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. 651).

To protect worker health, the OSH Act authorizes the Occupational Safety and Health Administration ("OSHA" or "Agency") to develop standards that provide for "monitoring or measuring employee exposure" to occupational hazards and "prescribe the type and frequency of medical examinations and other tests which shall be made available [by the employer] to employees exposed to such hazards . . . to most effectively determine whether the health of such employees is adversely affected by such exposure" (29 U.S.C. 655). Moreover, the Act directs the Agency to "issue regulations requiring employers to maintain accurate records of employee exposures to potentially toxic materials or other harmful physical agents which are required to be monitored and measured," and further specifies that such regulations provide "for each employee or former employee to have access to such records as will indicate [their] own exposure to toxic materials or harmful physical agents" (29 U.S.C. 657). In addition, the OSH Act mandates that "[e]ach employer shall make, keep and preserve, and make available to the Secretary [of Labor] . . . such records regarding [his/her] activities relating this Act as the Secretary . . . may prescribe by regulation as necessary or appropriate for the enforcement of this Act or for developing

¹ The purpose of this Supporting Statement is to analyze and describe the burden hours and costs associated with provisions of this standard that contain paperwork requirements; it does not provide information or guidance on how to comply with, or how to enforce, the Standard.

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information regarding the causes and prevention of occupational accidents and illnesses" (29 U.S.C. 657).

Under the authority granted by the OSH Act, the Agency published a standard for the construction industry that regulated worker cadmium (Cd) exposure (§1926.1127; the Standard"). OSHA based the Standard on a determination that occupational exposure to Cd poses a hazard to workers. This determination showed Cd exposure may cause lung cancer, prostate cancer, non-malignant respiratory disease, acute pneumonitis, fever and chest pain, severe weakness, coughing and tightness of the chest, and kidney disease. Items 2 and 12 below list and describe the specific information collection requirements of the Standard.

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.**

Exposure Monitoring (§1926.1127(d))

Initial Monitoring (§1926.1127(d)(2)(i) and (d)(2)(ii))

§1926.1127(d)(2)(i) - Except as provided for in paragraph (d)(2)(iii) of this section, where a determination conducted under paragraph (d)(1)(i) of this section shows the possibility of employee exposure to cadmium at or above the action level, the employer shall conduct exposure monitoring as soon as practicable that is representative of the exposure for each employee in the workplace who is or may be exposed to cadmium at or above the action level.

§1926.1127(d)(2)(ii) - In addition, if the employee periodically performs tasks that may expose the employee to a higher concentration of airborne cadmium, the employee shall be monitored while performing those tasks.

Purpose: Initial monitoring assists employers in identifying areas of operation that may require additional efforts to reduce exposure and come into compliance with the Standard. Initial monitoring results also assist employers in determining the need for engineering controls, instituting or modifying work practices, and in selecting appropriate respiratory protection to prevent employees from overexposure. This information also determines whether the employer must perform periodic monitoring.

§1926.1127(d)(2)(iii) - Where the employer has objective data, as defined in paragraph (n)(2) of this section, demonstrating that employee exposure to cadmium will not exceed airborne concentrations at or above the action level under the expected conditions of processing, use, or handling, the employer may rely upon such data instead of implementing initial monitoring.

Purpose: By eliminating the need for initial monitoring, this alternative encourages employers

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to use operations that substantially reduce worker exposures to Cd. (See discussion of paragraph (n)(2) for additional information on using objective data.)

§1926.1127(d)(2)(iv) - Where a determination conducted under paragraphs (d)(1) or (d)(2) of this section is made that a potentially exposed employee is not exposed to airborne concentrations of cadmium at or above the action level, the employer shall make a written record of such determination. The record shall include at least the monitoring data developed under paragraphs (d)(2)(i) - (iii) of this section, where applicable, and shall also include the date of determination, and the name of each employee.

Purpose: This information provides assurance to workers, their representatives, and OSHA that employers made the determinations correctly and, therefore, that they are accurate and valid.

Monitoring Frequency (Periodic Monitoring) (§1926.1127(d)(3))

§1926.1127(d)(3)(i) - If the initial monitoring or periodic monitoring reveals employee exposures to be at or above the action level, the employer shall monitor at a frequency and pattern needed to assure that the monitoring results reflect with reasonable accuracy the employee's typical exposure levels, given the variability in the tasks performed, work practices, and environmental conditions on the job site, and to assure the adequacy of respiratory selection and the effectiveness of engineering and work practice controls.

Purpose: Periodic monitoring is necessary because relatively minor changes in tasks, work practices, and environmental conditions may affect airborne concentrations of Cd. Employers may use these monitoring results to evaluate the effectiveness of selected control methods. In addition, these measurements remind both the employer and workers of the need to protect workers against the effects of overexposure to Cd. These monitoring data will also inform the examining physician of the existence and extent of a worker's Cd exposures for use in assessing the worker's medical condition.

Additional Monitoring (§1926.1127(d)(4))

The employer also shall institute the exposure monitoring required under paragraphs (d)(2)(i) and (d)(3) of this section whenever there has been a change in the raw materials, equipment, personnel, work practices, or finished products that may result in additional employees being exposed to cadmium at or above the action level or in employees already exposed to cadmium at or above the action level being exposed above the PEL, or whenever the employer or competent person has any reason to suspect that any other change might result in such further exposure.

Purpose: Additional monitoring ensures that the workplace is safe, or alerts the employer of the need to improve protection.

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Employee Notification of Monitoring Results (§1926.1127(d)(5))

§1926.1127(d)(5)(i)- The employer must, as soon as possible but no later than 5 working days after the receipt of the results of any monitoring performed under this section, notify each affected employee of these results either individually in writing or by posting the results in an appropriate location that is accessible to employees.

§1926.1127(d)(5)(ii) - Wherever monitoring results indicate that employee exposure exceeds the PEL, the employer shall include in the written notice a statement that the PEL has been exceeded and a description of the corrective action being taken by the employer to reduce employee exposure to or below the PEL.

Purpose: This provision assures that workers receive accurate exposure data and, in addition, provides them with information regarding the specific actions the employer is taking to lower their exposures and furnish them with a safe and healthful workplace in accordance with section 8(c)(3) of the Act.

Compliance Program (§1926.1127(f)(5))

§1926.1127(f)(5)(i) - Where employee exposure to cadmium exceeds the PEL and the employer is required under paragraph (f)(1) of this section to implement controls to comply with the PEL, prior to the commencement of the job the employer shall establish and implement a written compliance program to reduce employee exposure to or below the PEL. To the extent that engineering and work practice controls cannot reduce exposures to or below the PEL, the employer shall include in the written compliance program the use of appropriate respiratory protection to achieve compliance with the PEL.

§1926.1127(f)(5)(ii) - Written compliance programs shall be reviewed and updated as often and as promptly as necessary to reflect significant changes in the employer's compliance status or significant changes in the lowest air cadmium level that is technologically feasible.

§1926.1127(f)(5)(iii) - A competent person shall review the comprehensive compliance program initially and after each change.

§1926.1127(f)(5)(iv) - Written compliance programs shall be provided upon request for examination and copying to the Assistant Secretary, the Director, affected employees, and designated employee representatives.

Purpose: This requirement commits the employer to evaluating worker Cd exposures and establishing an organized and complete program for reducing these exposures to the PEL; it does so prior to beginning a construction job to prevent unnecessary exposure to Cd, and to inform workers regarding planned controls. The requirement to prepare and update the written

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compliance program ensures that employers continue to evaluate variable workplace conditions, including Cd exposures, and to implement feasible engineering and work-practice controls as required.

OSHA has determined that the requirement for employers to make information available upon request to the Assistant Secretary is not a collection of information; OSHA typically requests access to records during an inspection, and information collected by the Agency during the investigation is not subject to the PRA under 5 CFR 1320.4(a)(2). While NIOSH may use records collected from employers for research purposes, the Agency does not anticipate NIOSH to request employers to make available records during the approval period. Therefore, the burden for the employer to make this information available to NIOSH is zero. OSHA is not taking burden for this activity under Item 12 of this Supporting Statement.

Respiratory Protection (§1926.1127(g))

§1926.1127(g)(2)(i) - The employer must implement a respiratory protection program in accordance with 29 CFR 1910.134 (b) through (d) (except (d)(1)(iii)), and (f) through (m), which covers each employee required by this section to use a respirator.

Purpose: To ensure that employers establish a standardized procedure for selecting, using, and maintaining respirators for each workplace that requires respirator use. Developing written procedures ensures that employers implement the required respirator program in an effective and reliable manner that addresses the unique characteristics (including chemical hazards) of the workplace. The Agency accounts for the burden hours and cost resulting from the respirator-program requirements under the Information Collection Request for OSHA's Respiratory Protection Standard (§1910.134), Office of Management and Budget (OMB) Control Number 1218-0099.

Emergency Situations (§1926.1127(h))

The employer shall develop and implement a written plan for dealing with emergency situations involving substantial releases of airborne cadmium. The plan shall include provisions for the use of appropriate respirators and personal protective equipment. In addition, employees not essential to correcting the emergency situation shall be restricted from the area and normal operations halted in that area until the emergency is abated.

Purpose: Emergency plans provide workers with information to maximize their personal protection and minimize Cd exposures under these conditions.

Protective Work Clothing and Equipment; Removal and Storage (§1926.1127(i)(2)(iv))

The employer shall ensure that containers of contaminated protective clothing and equipment

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that are to be taken out of the change rooms or the workplace for laundering, cleaning, maintenance or disposal shall bear labels in accordance with paragraph (m)(3)(ii) of this section.

Purpose: This information allows personnel who handle Cd-contaminated protective clothing or equipment to protect themselves from the harmful effects of Cd.

Protective Work Clothing and Equipment; Cleaning, Replacement and Disposal (Notification of Laundry Personnel) (§1926.1127(i)(3)(v))

The employer shall inform any person who launders or cleans protective clothing or equipment contaminated with cadmium of the potentially harmful effects of exposure to cadmium, and that the clothing and equipment should be laundered or cleaned in a manner to effectively prevent the release of airborne cadmium in excess of the PEL.

Purpose: This information allows such personnel to protect themselves from harmful Cd exposures.

Housekeeping; Storing Cadmium-Contaminated Articles for Disposal (§1926.1127(k)(7))

Waste, scrap, debris, bags, containers, personal protective equipment, and clothing contaminated with cadmium and consigned for disposal shall be collected and disposed of in sealed impermeable bags or other closed, impermeable containers. These bags and containers shall be labeled in accordance with paragraph (m)(3)(ii) of this section.

Purpose: This information allows personnel who handle these articles to protect themselves from exposure to hazardous levels of Cd.

Medical Surveillance (§1926.1127(l))

General (§1926.1127(l)(1))

§1926.1127(l)(1)(i)(A) – Currently exposed-The employer shall institute a medical surveillance program for all employees who are or may be exposed at or above the action level and all employees who perform the following tasks, operations or jobs: Electrical grounding with cadmium welding; cutting, brazing, burning, grinding or welding on surfaces that were painted with cadmium-containing paints; electrical work using cadmium-coated conduit; use of cadmium containing paints; cutting and welding cadmium-plated steel; brazing or welding with cadmium alloys; fusing of reinforced steel by cadmium welding; maintaining or retrofitting cadmium-coated equipment; and, wrecking and demolition where cadmium is present. A medical surveillance program will not be required if the employer demonstrates that the employee:

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§1926.1127(l)(1)(i)(A)(1) - Is not currently exposed by the employer to airborne concentrations of cadmium at or above the action level on 30 or more days per year (twelve consecutive months); and,

§1926.1127(l)(1)(i)(A)(2) - Is not currently exposed by the employer in those tasks on 30 or more days per year (twelve consecutive months).

§1926.1127(l)(1)(i)(B) – Previously exposed- The employer shall also institute a medical surveillance program for all employees who might previously have been exposed to cadmium by the employer prior to the effective date of this standard in tasks specified under paragraph (l)(1)(i)(A) of this section, unless the employer demonstrates that the employee did not in the years prior to the effective date of this section work in those tasks for the employer with exposure to cadmium for an aggregated total of more than 12 months.

Initial Examination (§1926.1127(l)(2))

§1926.1127(l)(2)(i) - For employees covered by medical surveillance under paragraph (l)(1)(i) of this section, the employer shall provide an initial medical examination. The examination shall be provided to those employees within 30 days after initial assignment to a job with exposure to cadmium or no later than 90 days after the effective date of this section, whichever date is later.

§1926.1127(l)(2)(ii) - The initial medical examination shall include:

§1926.1127(l)(2)(ii)(A) - A detailed medical and work history, with emphasis on: Past, present, and anticipated future exposure to cadmium; any history of renal, cardiovascular, respiratory, hematopoietic, reproductive, and/or musculoskeletal system dysfunction; current usage of medication with potential nephrotoxic side-effects; and smoking history and current status; and

§1926.1127(l)(2)(ii)(B) - Biological monitoring that includes the following tests:

§1926.1127(l)(2)(ii)(B)(1) - Cadmium in urine (CdU), standardized to grams of creatinine (g/Cr);

§1926.1127(l)(2)(ii)(B)(2) - Beta-2 microglobulin in urine (β_2 -M, standardized to grams of creatinine (g/Cr), with pH specified, as described in Appendix F to this section; and

§1926.1127(l)(2)(ii)(B)(3) - Cadmium in blood (CdB), standardized to liters of whole blood (lwb).

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§1926.1127(l)(2)(iii) - Recent Examination: An initial examination is not required to be provided if adequate records show that the employee has been examined in accordance with the requirements of paragraph (l)(2)(ii) of this section within the past 12 months. In that case, such records shall be maintained as part of the employee's medical record and the prior exam shall be treated as if it were an initial examination for the purposes of paragraphs (l)(3) and (4) of this section.

Actions Triggered by Initial Biological Monitoring (§1926.1127(l)(3))

§1926.1127(l)(3)(i) - If the results of the biological monitoring tests in the initial examination show the employee's CdU level to be at or below 3 ug/g Cr, β_2 -M level to be at or below 300 ug/g Cr and CdB level to be at or below 5 ug/lwb, then:

§1926.1127(l)(3)(i)(A) - For employees who are subject to medical surveillance under paragraphs (l)(1)(i)(A) of this section because of current or anticipated exposure to cadmium, the employer shall provide the minimum level of periodic medical surveillance in accordance with the requirements in paragraph (l)(4)(i) of this section; and

§1926.1127(l)(3)(i)(B) - For employees who are subject to medical surveillance under paragraph (l)(1)(i)(B) of this section because of prior but not current exposure, the employer shall provide biological monitoring for CdU, β_2 -M, and CdB one year after the initial biological monitoring and then the employer shall comply with the requirements of paragraph (l)(4)(vi) of this section.

§1926.1127(l)(3)(ii)(B) - Within 30 days after the exposure reassessment, specified in (l)(3)(ii)(A) of this section, take reasonable steps to correct any deficiencies found in the reassessment that may be responsible for the employee's excess exposure to cadmium; and,

§1926.1127(l)(3)(ii)(C) - Within 90 days after receipt of biological monitoring results, provide a full medical examination to the employee in accordance with the requirements of paragraph (l)(4)(ii) of this section. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. If the physician determines that medical removal is not necessary, then until the employee's CdU level falls to or below 3 ug/g Cr, B(2)-M level falls to or below 300 ug/g Cr and CdB level falls to or below 5 ug/lwb, the employer shall:

§1926.1127(l)(3)(ii)(C)(1) - Provide biological monitoring in accordance with paragraph (l)(2)(ii)(B) of this section on a semiannual basis; and

§1926.1127(l)(3)(ii)(C)(2) - Provide annual medical examinations in accordance with paragraph (l)(4)(ii) of this section.

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§1926.1127(l)(3)(iii) - For all employees who are subject to medical surveillance under paragraph (l)(1)(i) of this section, if the results of the initial biological monitoring tests show the level of CdU to be in excess of 15 µg/g Cr, or the level of CdB to be in excess of 15 µg/lwb, or the level of β₂-M to be in excess of 1,500 µg/g Cr, the employer shall comply with the requirements of paragraphs (l)(3)(ii)(A)-(B) of this section. Within 90 days after receipt of biological monitoring results, the employer shall provide a full medical examination to the employee in accordance with the requirements of paragraph (l)(4)(ii) of this section. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. However, if the initial biological monitoring results and the biological monitoring results obtained during the medical examination both show that: CdU exceeds 15 µg/g Cr; or CdB exceeds 15 µg/lwb; or β₂-M exceeds 1500 µg/g Cr, and in addition CdU exceeds 3 µg/g Cr or CdB exceeds 5 µg/liter of whole blood, then the physician shall medically remove the employee from exposure to cadmium at or above the action level. If the second set of biological monitoring results obtained during the medical examination does not show that a mandatory removal trigger level has been exceeded, then the employee is not required to be removed by the mandatory provisions of this paragraph. If the employee is not required to be removed by the mandatory provisions of this paragraph or by the physician's determination, then until the employee's CdU level falls to or below 3 µg/g Cr, β₂-M level falls to or below 300 µg/g Cr and CdB level falls to or below 5 µg/lwb, the employer shall:

§1926.1127(l)(3)(iii)(A) - Periodically reassess the employee's occupational exposure to cadmium;

§1926.1127(l)(3)(iii)(B) - Provide biological monitoring in accordance with paragraph (l)(2)(ii)(B) of this section on a quarterly basis; and

§1926.1127(l)(3)(iii)(C) - Provide semiannual medical examinations in accordance with paragraph (l)(4)(ii) of this section.

§1926.1127(l)(3)(iv) - For all employees to whom medical surveillance is provided, beginning on January 1, 1999, and in lieu of paragraph (l)(3)(iii) of this section, whenever the results of initial biological monitoring tests show the employee's CdU level to be in excess of 7 µg/g Cr, or β₂-M level to be in excess of 750 µg/g Cr, or CdB level to be in excess of 10 µg/lwb, the employer shall comply with the requirements of paragraphs (l)(3)(ii)(A)-(B) of this section. Within 90 days after receipt of biological monitoring results, the employer shall provide a full medical examination to the employee in accordance with the requirements of paragraph (l)(4)(ii) of this section. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. However, if the initial biological monitoring results and the biological monitoring results obtained during the medical examination both show that: CdU exceeds 7 µg/g Cr; or CdB exceeds 10 µg/lwb; or β₂-M exceeds 750 µg/g Cr, and in addition CdU exceeds 3 µg/g Cr or CdB exceeds 5 µg/liter of

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whole blood, then the physician shall medically remove the employee from exposure to cadmium at or above the action level. If the second set of biological monitoring results obtained during the medical examination does not show that a mandatory removal trigger level has been exceeded, then the employee is not required to be removed by the mandatory provisions of this paragraph. If the employee is not required to be removed by the mandatory provisions of this paragraph or by the physician's determination, then until the employee's CdU level falls to or below 3 µg/g Cr, β₂-M level falls to or below 300 µg/g Cr and CdB level falls to or below 5 µg/lwb, the employer shall:

§1926.1127(l)(3)(iv)(A) - Periodically reassess the employee's occupational exposure to cadmium;

§1926.1127(l)(3)(iv)(B) - Provide biological monitoring in accordance with paragraph (l)(2)(ii)(B) of this section on a quarterly basis; and

§1926.1127(l)(3)(C) - Provide semiannual medical examinations in accordance with paragraph (l)(4)(ii) of this section.

Periodic Medical Surveillance (§1926.1127(l)(4))

§1926.1127(l)(4)(i) - For each employee who is covered by medical surveillance under paragraph (l)(1)(i)(A) of this section because of current or anticipated exposure to cadmium, the employer shall provide at least the minimum level of periodic medical surveillance, which consists of periodic medical examinations and periodic biological monitoring. A periodic medical examination shall be provided within one year after the initial examination required by paragraph (l)(2) of this section and thereafter at least biennially. Biological sampling shall be provided at least annually either as part of a periodic medical examination or separately as periodic biological monitoring.

§1926.1127(l)(4)(ii) - The periodic medical examination shall include:

§1926.1127(l)(4)(ii)(A) - A detailed medical and work history, or update thereof, with emphasis on: past, present and anticipated future exposure to cadmium; smoking history and current status; reproductive history; current use of medications with potential nephrotoxic side-effects; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculo-skeletal system dysfunction; and as part of the medical and work history, for employees who wear respirators, questions 3-11 and 25-32 in Appendix D to this section;

§1926.1127(l)(4)(ii)(B) - A complete physical examination with emphasis on: blood pressure, the respiratory system, and the urinary system;

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§1926.1127(l)(4)(ii)(C) - A 14 inch by 17 inch or other reasonably-sized standard film or digital posterior-anterior chest X-ray (after the initial X-ray, the frequency of chest X-rays is to be determined by the examining physician);

§1926.1127(l)(4)(ii)(D) - Pulmonary function tests, including forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV1);

§1926.1127(l)(4)(ii)(E) - Biological monitoring, as required in paragraph (l)(2)(ii)(B) of this section;

§1926.1127(l)(4)(ii)(F) - Blood analysis, in addition to the analysis required under paragraph (l)(2)(ii)(B) of this section, including blood urea nitrogen, complete blood count, and serum creatinine;

§1926.1127(l)(4)(ii)(G) - Urinalysis, in addition to the analysis required under paragraph (l)(2)(ii)(B) of this section, including the determination of albumin, glucose, and total and low molecular weight proteins;

§1926.1127(l)(4)(ii)(H) - For males over 40 years old, prostate palpation, or other at least as effective diagnostic test(s), and;

§1926.1127(l)(4)(ii)(I) - Any additional tests or procedures deemed appropriate by the examining physician.

§1926.1127(l)(4)(iii) - Periodic biological monitoring shall be provided in accordance with paragraph (l)(2)(ii)(B) of this section.

§1926.1127(l)(4)(iv) - If the results of periodic biological monitoring or the results of biological monitoring performed as part of the periodic medical examination show the level of the employee's CdU, β 2-M, or CdB to be in excess of the levels specified in paragraphs (l)(3)(ii) or (iii) of this section; or beginning on January 1, 1999, in excess of the levels specified in paragraphs (l)(3)(ii) or (iv), the employer shall take the appropriate actions specified in paragraphs (l)(3)(ii)-(iv) of this section, respectively.

§1926.1127(l)(4) (v) - For previously exposed employees under paragraph (l)(1)(i)(B) of this section:

§1926.1127(l)(4)(v)(C) - However, if the results of the follow-up tests specified in paragraph (l)(4)(v)(A) or (B) of this section indicate that the level of the employee's CdU, β 2-M, or CdB exceeds these same levels, the employer is required to provide annual medical examinations in accordance with the provisions of paragraph (l)(4)(ii) of this section until the results of biological monitoring are consistently below these levels or the

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examining physician determines in a written medical opinion that further medical surveillance is not required to protect the employee's health.

§1926.1127(l)(4)(vi) - A routine, biennial medical examination is not required to be provided in accordance with paragraphs (l)(3)(i) and (l)(4) of this section if adequate medical records show that the employee has been examined in accordance with the requirements of paragraph (l)(4)(ii) of this section within the past 12 months. In that case, such records shall be maintained by the employer as part of the employee's medical record, and the next routine, periodic medical examination shall be made available to the employee within two years of the previous examination.

Actions Triggered by Medical Examinations (§1926.1127(l)(5))

§1926.1127(l)(5)(i) - If the results of a medical examination carried out in accordance with this section indicate any laboratory or clinical finding consistent with cadmium toxicity that does not require employer action under paragraphs (l)(2), (3) or (4) of this section, the employer shall take the following steps and continue to take them until the physician determines that they are no longer necessary.

§1926.1127(l)(5)(i)(B) - Provide semi-annual medical reexaminations to evaluate the abnormal clinical sign(s) of cadmium toxicity until the results are normal or the employee is medically removed; and

§1926.1127(l)(5)(i)(C) - Where the results of tests for total proteins in urine are abnormal, provide a more detailed medical evaluation of the toxic effects of cadmium on the employee's renal system.

Examination for Respirator Use (§1926.1127(l)(6))

§1926.1127(l)(6)(i) - To determine an employee's fitness for respirator use, the employer shall provide a medical examination that includes the elements specified in (l)(6)(i)(A)-(D) of this section. This examination shall be provided prior to the employee's being assigned to a job that requires the use of a respirator or no later than 90 days after this section goes into effect, whichever date is later, to any employee without a medical examination within the preceding 12 months that satisfies the requirements of this paragraph.

§1926.1127(l)(6)(i)(A) - A detailed medical and work history, or update thereof, with emphasis on: past exposure to cadmium; smoking history and current status; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculo-skeletal system dysfunction; a description of the job for which the respirator is required; and questions 3-11 and 25-32 in Appendix D;

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§1926.1127(l)(6)(i)(B) - A blood pressure test;

§1926.1127(l)(6)(i)(C) - Biological monitoring of the employee's levels of CdU, CdB and US
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in accordance with the requirements of paragraph (l)(2)(ii)(B) of this section, unless such results already have been obtained within the twelve months; and

§1926.1127(l)(6)(i)(D) - Any other test or procedure that the examining physician deems appropriate.

§1926.1127(l)(6)(ii) - After reviewing all the information obtained from the medical examination required in paragraph (l)(6)(i) of this section, the physician shall determine whether the employee is fit to wear a respirator.

§1926.1127(l)(6)(iii) - Whenever an employee has exhibited difficulty in breathing during a respirator fit test or during use of a respirator, the employer, as soon as possible, shall provide the employee with a periodic medical examination in accordance with paragraph (l)(4)(ii) of this section to determine the employee's fitness to wear a respirator.

§1926.1127(l)(6)(iv) - Where the results of the examination required under paragraphs (l)(6)(i), (ii), or (iii) of this section are abnormal, medical limitation or prohibition of respirator use shall be considered. If the employee is allowed to wear a respirator, the employee's ability to continue to do so shall be periodically evaluated by a physician.

Emergency Examinations (§1926.1127(l)(7))

§1926.1127(l)(7)(i) - In addition to the medical surveillance required in paragraphs (l)(2)-(6) of this section, the employer shall provide a medical examination as soon as possible to any employee who may have been acutely exposed to cadmium because of an emergency.

§1926.1127(l)(7)(ii) - The examination shall include the requirements of paragraph (l)(4)(ii) of this section, with emphasis on the respiratory system, other organ systems considered appropriate by the examining physician, and symptoms of acute overexposure, as identified in paragraphs II(B)(1)-(2) and IV of Appendix A of this section.

Termination of Employment Examination (§1926.1127(l)(8))

At termination of employment, the employer shall provide a medical examination in accordance with paragraph (l)(4)(ii) of this section, including a chest X-ray where necessary, to any

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employee to whom at any prior time the employer was required to provide medical surveillance under paragraphs (l)(1)(i) or (l)(7) of this section. However, if the last examination satisfied the requirements of paragraph (l)(4)(ii) of this standard and was less than six months prior to the date of termination, no further examination is required unless otherwise specified in paragraphs (l)(3) or (l)(5) of this section;

§1926.1127(l)(8)(ii) - In addition, if the employer has discontinued all periodic medical surveillance under paragraph (l)(4)(v) of this section, no termination of employment medical examination is required.

Purpose: Documentation and maintenance of the medical examination results required by the Standard provide a continuous record of worker health. Physicians use these records to determine the extent to which workers, since their last examination, experience health effects related to Cd exposure. Additionally, if signs and symptoms of potential Cd overexposure appear, the physician often needs information about a worker's previous medical conditions to make an accurate diagnosis of the presenting condition, ascertain its apparent cause, and identify a course of treatment. Medical records also permit workers to determine whether they need treatment, or to evaluate the effectiveness of their employer's exposure reduction program.

Information Provided to the Physician (§1926.1127(l)(9))

§1926.1127(l)(9) - Information provided to the physician: The employer shall provide the following information to the examining physician:

§1926.1127(l)(9)(i) - A copy of this standard and appendices;

§1926.1127(l)(9)(ii) - A description of the affected employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to cadmium;

§1926.1127(l)(9)(iii) - The employee's former, current, and anticipated future levels of occupational exposure to cadmium;

§1926.1127(l)(9)(iv) - A description of any personal protective equipment, including respirators, used or to be used by the employee, including when and for how long the employee has used that equipment; and

§1926.1127(l)(9)(v) - Relevant results of previous biological monitoring and medical examinations.

Purpose: Making this information available to physicians assists them in evaluating an worker's health and fitness for specific job assignments involving Cd exposure. In the case of medical examinations administered in response to emergency exposures, the physician can use the

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exposure information to devise appropriate treatment.

Physician's Written Medical Opinion (§1926.1127(l)(10))

§1926.1127(l)(10)(i) - The employer shall promptly obtain a written, medical opinion from the examining physician for each medical examination performed on each employee. This written opinion shall contain:

§1926.1127(l)(10)(i)(A) - The physician's diagnosis for the employee;

§1926.1127(l)(10)(i)(B) - The physician's opinion as to whether the employee has any detected medical condition(s) that would place the employee at increased risk of material impairment to health from further exposure to cadmium, including any indications of potential cadmium toxicity;

§1926.1127(l)(10)(i)(C) - The results of any biological or other testing or related evaluations that directly assess the employee's absorption of cadmium;

§1926.1127(l)(10)(i)(D) - Any recommended removal from, or limitation on the activities or duties of the employee or on the employee's use of personal protective equipment, such as respirators;

§1926.1127(l)(10)(i)(E) - A statement that the physician has clearly and carefully explained to the employee the results of the medical examination, including all biological monitoring results and any medical conditions related to cadmium exposure that require further evaluation or treatment, and any limitation on the employee's diet or use of medications.

§1926.1127(l)(10)(ii) - The employer shall promptly obtain a copy of the results of any biological monitoring provided by an employer to an employee independently of a medical examination under paragraphs (l)(2) and (l)(4) of this section, and, in lieu of a written medical opinion, an explanation sheet explaining those results.

§1926.1127(l)(10)(iii) - The employer shall instruct the physician not to reveal orally or in the written medical opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to cadmium.

Purpose: The purpose in requiring the employer to obtain a physician's written opinion is to provide the employer with medical information to use in determining the worker's initial job assignments and to assess the worker's ability to use protective clothing and equipment. The physician's written opinion also informs the employer about whether the worker has a condition indicating Cd overexposure; the prohibition against providing the employer with information

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regarding conditions unrelated to Cd exposure ensures that discussions between the physician and patient are open and candid, thereby enhancing diagnosis and treatment. The requirement that the physician's opinion be in writing ensures that the information is available for future reference. Providing workers with a copy of the physician's written opinion informs them of the medical-examination results so that they can determine the need for, and evaluate the effectiveness of, treatments and other interventions.

Medical Removal Protection (MRP) (§1926.1127(l)(11))

§1926.1127(l)(11)(i)(D) - For any employee who is medically removed under the provisions of paragraph (l)(11)(i) of this section, the employer shall provide follow-up medical examinations semi-annually until, in a written medical opinion, the examining physician determines that either the employee may be returned to his/her former job status or the employee must be permanently removed from excess cadmium exposure.

§1926.1127(l)(11)(i)(E) - The employer may not return an employee who has been medically removed for any reason to his/her former job status until a physician determines in a written medical opinion that continued medical removal is no longer necessary to protect the employee's health.

§1926.1127(l)(11)(v) - However, when in the examining physician's opinion continued exposure to cadmium will not pose an increased risk to the employee's health and there are special circumstances that make continued medical removal an inappropriate remedy, the physician shall fully discuss these matters with the employee, and then in a written determination may return a worker to his/her former job status despite what would otherwise be unacceptably high biological monitoring results. Thereafter and until such time as the employee's biological monitoring results have decreased to levels where he/she could have been returned to his/her former job status, the returned employee shall continue medical surveillance as if he/she were still on medical removal. Until such time, the employee is no longer subject to mandatory medical removal. Subsequent questions regarding the employee's medical removal shall be decided solely by a final medical determination.

Purpose: Medical removal prevents medical impairments induced or exacerbated by Cd from becoming worse. In addition, medical removal allows workers who have these impairments an opportunity to recuperate and return to their former jobs.

Medical Removal Protection Benefits (§1926.1127(l)(12)(iii))

§1926.1127(l)(12)(iii)(A) - The employer shall make available to the employee a medical examination pursuant to this section in order to obtain a final medical determination as to whether the employee may be returned to his/her former job status or must be permanently removed from excess cadmium exposure; and

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§1926.1127(l)(12)(B)(iii) - The employer shall assure that the final medical determination indicates whether the employee may be returned to his/her former job status and what steps, if any, should be taken to protect the employee's health;

Multiple Physician Review (§1926.1127(l)(13))

§1926.1127(l)(13)(i)- If the employer selects the initial physician to conduct any medical examination or consultation provided to an employee under this section, the employee may designate a second physician to:

§1926.1127(l)(13)(i)(A) - Review any findings, determinations, or recommendations of the initial physician; and

§1926.1127(l)(13)(i)(B) - Conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

§1926.1127(l)(13)(ii) - The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician provided by the employer conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, multiple physician review upon the employee doing the following within fifteen (15) days after receipt of this notice, or receipt of the initial physician's written opinion, whichever is later:

§1926.1127(l)(13)(ii)(A) - Informing the employer that he or she intends to seek a medical opinion; and

§1926.1127(l)(13)(ii)(B) - Initiating steps to make an appointment with a second physician.

§1926.1127(l)(13)(iii) - If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve any disagreement.

§1926.1127(l)(13)(iv) - If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee, through their respective physicians, shall designate a third physician to:

§1926.1127(l)(13)(iv)(A) - Review any findings, determinations, or recommendations of the other two physicians; and

§1926.1127(l)(13)(iv)(B) - Conduct such examinations, consultations, laboratory tests, and discussions with the other two physicians as the third physician deems necessary to

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resolve the disagreement among them.

§1926.1127(l)(13)(v) - The employer shall act consistently with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement that is consistent with the recommendations of at least one of the other two physicians.

Purpose: OSHA believes that multiple-physician review improves worker participation in an employer's medical surveillance program, thereby increasing early detection and treatment Cd-related diseases. However, program participation is strictly voluntary on the part of workers. If the medical opinion provided by the employer's physician could result in job removal, and no opportunity exists for workers to obtain a second medical opinion, many of them would refuse to participate in the medical surveillance program.

Information the Employer Must Provide the Employee (§1926.1127(l)(15))

§1926.1127(l)(15)(i) - The employer shall provide a copy of the physician's written medical opinion to the examined employee within five working days after receipt thereof.

§1926.1127(l)(15)(ii) - The employer shall provide the employee with a copy of the employee's biological monitoring results and an explanation sheet explaining the results within five working days after receipt thereof.

§1926.1127(l)(15)(iii) - Within 30 days after a request by an employee, the employer shall provide the employee with the information the employer is required to provide the examining physician under paragraph (l)(9) of this section.

Purpose: This medical information allows workers to determine the need for, and to evaluate the effectiveness of, treatments and other interventions.

Communication of Cadmium Hazards to Employees (§1926.1127(m))

§1926.1127(m)(1) - *Hazard communication.* The employer shall include cadmium in the program established to comply with the Hazard Communication Standard (HCS) (§1910.1200). The employer shall ensure that each employee has access to labels on containers of cadmium and safety data sheets, and is trained in accordance with the provisions of HCS and paragraph (m)(4) of this section. The employer shall provide information on at least the following hazards: Cancer; lung effects; kidney effects; and acute toxicity effects.²

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

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§1926.1127(m)(2)- Warning Signs.

§1926.1127(m)(2)(i) - Warning signs shall be provided and displayed in regulated areas. In addition, warning signs shall be posted at all approaches to regulated areas so that an employee may read the signs and take necessary protective steps before entering the area.³

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 Cd exposures; in addition, the signs supplement worker training by specifying the limits of regulated areas.

§1926.1127(m)(2)(ii) - Warning signs required by paragraph (m)(2)(i) of this section shall bear the following legend:

DANGER
CADMIUM
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS AND KIDNEYS
WEAR RESPIRATORY PROTECTION IN THIS AREA
AUTHORIZED PERSONNEL ONLY

§1926.1127(m)(2)(iii) - The employer shall ensure that signs required by this paragraph (m)(2) are illuminated, cleaned, and maintained as necessary so that the legend is readily visible.

§1926.1127(m)(2)(iv) - Prior to June 1, 2016, employers may use the following legend in lieu of that specified in paragraph (m)(2)(ii) of this section:

DANGER
CADMIUM
CANCER HAZARD
CAN CAUSE LUNG AND KIDNEY DISEASE
AUTHORIZED PERSONNEL ONLY
RESPIRATORS REQUIRED IN THIS AREA

§1926.1127(m)(3) -Warning Labels

§1926.1127(m)(3)(i) - Shipping and storage containers containing cadmium or cadmium

³The Standard provides specific language for the required signs and labels; therefore, the Agency is exempted from estimating the burden hours and cost of this provision under 5 CFR 1320.3(c)(2) (“Controlling paperwork burden on the public”).

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compounds shall bear appropriate warning labels, as specified in paragraph (m)(1) of this section.

§1926.1127(m)(3)(ii) - The warning labels for containers of cadmium-contaminated protective clothing, equipment, waste, scrap, or debris shall include at least the following information:

DANGER
CONTAINS CADMIUM
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS AND KIDNEYS
AVOID CREATING DUST

§1926.1127(m)(3)(iii) - Where feasible, installed cadmium products shall have a visible label or other indication that cadmium is present.

§1926.1127(m)(3)(iv) - Prior to June 1, 2015, employers may include the following information on shipping and storage containers containing cadmium, cadmium compounds, or cadmium-contaminated clothing, equipment, waste, scrap, or debris in lieu of the labeling requirements specified in paragraphs (m)(3)(i) and (m)(3)(ii) of this section:

DANGER
CONTAINS CADMIUM
CANCER HAZARD
AVOID CREATING DUST
CAN CAUSE LUNG AND KIDNEY DISEASE

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

Employee Information and Training (§1926.1127(m)(4))

The requirement that employers provide training to workers under paragraph (m)(4), except for the access provision of (m)(4)(iv)(A) and (B), is not considered to be a collection of information.

§1926.1127(m)(4)(iv)(A) - The employer shall make a copy of this section and its appendices readily available to all affected employees and shall provide a copy without cost if requested.

OSHA considers this requirement be a public disclosure of information originally supplied by the Federal government to the employer for the purpose of disclosure to the public; therefore

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PRA does not define this as a collection of information (5 CFR 1320.3(c)(2)).

§1926.1127(m)(4)(iv)(B) - Upon request, the employer shall provide to the Assistant Secretary or the Director all materials relating to the employee information and the training program.

OSHA has determined that the requirement for employers to make information available upon request to the Assistant Secretary is not a collection of information; OSHA typically requests access to records during an inspection, and information collected by the Agency during the investigation is not subject to the PRA under 5 CFR 1320.4(a)(2). While NIOSH may use records collected from employers for research purposes, the Agency does not anticipate NIOSH to request employers to make available records during the approval period. Therefore, the burden for the employer to make this information available to NIOSH is zero. OSHA is not taking burden for this activity under Item 12 of this Supporting Statement.

Recordkeeping (§1926.1127(n))

Exposure Monitoring (§1926.1127(n)(1))

§1926.1127(n)(1)(i) - The employer shall establish and keep an accurate record of all air monitoring for cadmium in the workplace.

§1926.1127(n)(1)(ii) - This record shall include at least the following information:

§1926.1127(n)(1)(ii)(A) - The monitoring date, shift, duration, air volume, and results in terms of an 8-hour TWA of each sample taken, and if cadmium is not detected, the detection level;

§1926.1127(n)(1)(ii)(B) - The name and job classification of all employees monitored and of all other employees whose exposures the monitoring result is intended to represent, including, where applicable, a description of how it was determined that the employee's monitoring result could be taken to represent other employee's exposures;

§1926.1127(n)(1)(ii)(C) - A description of the sampling and analytical methods used and evidence of their accuracy;

§1926.1127(n)(1)(ii)(D) - The type of respiratory protective device, if any, worn by the monitored employee and by any other employee whose exposure the monitoring result is intended to represent;

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§1926.1127(n)(1)(ii)(E) - A notation of any other conditions that might have affected the monitoring results.

§1926.1127(n)(1)(ii)(F) - Any exposure monitoring or objective data that were used and the levels.

§1926.1127(n)(1)(iii) - The employer shall maintain this record for at least thirty (30) years, in accordance with 1926.33 of this part.

§1926.1127(n)(1)(iv) - The employer shall also provide a copy of the results of an employee's air monitoring prescribed in paragraph (d) of this section to an industry trade association and to the employee's union, if any, or, if either of such associations or unions do not exist, to another comparable organization that is competent to maintain such records and is reasonably accessible to employers and employees in the industry.

Purpose: Employers must maintain exposure measurement records for 30 years so that their workers, OSHA, and other interested parties (i.e., industry trade associations and worker unions, or comparable organizations) can identify the levels, durations, and extent of Cd exposure, determine if existing controls are protecting workers or whether additional controls are necessary to provide the required protection, and assess the relationship between Cd exposure and the subsequent development of medical diseases.

Objective Data for Exemption from Requirement for Initial Monitoring (§1926.1127(n)(2))

§ 1926.1127(n)(2)(i) - For purposes of this section, objective data are information demonstrating that a particular product or material containing cadmium or a specific process, operation, or activity involving cadmium cannot release dust or fumes in concentrations at or above the action level even under the worst-case release conditions. Objective data can be obtained from an industry-wide study or from laboratory product test results from manufacturers of cadmium-containing products or materials. The data the employer uses from an industry-wide survey must be obtained under workplace conditions closely resembling the processes, types of material, control methods, work practices and environmental conditions in the employer's current operations.

1926.1127(n)(2)(ii) - The employer shall maintain the record for at least 30 years of the objective data relied upon.

Purpose: Maintaining these records allows OSHA to ascertain whether employers are complying with the Standard, thereby ensuring that workers are receiving adequate protection from Cd exposure. In addition, workers and their representatives have access to these records, thereby providing assurance that the employer's use of the objective data is reasonable.

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Medical surveillance (§ 1926.1127(n)(3))

§ 1926.1127(n)(3)(i) - The employer shall establish and maintain an accurate record for each employee covered by medical surveillance under paragraph (l)(1)(i) of this section.

§ 1926.1127(n)(3)(ii) - The record shall include at least the following information about the employee:

§ 1926.1127(n)(3)(ii)(A) - Name and description of duties;

§ 1926.1127(n)(3)(ii)(B) - A copy of the physician's written opinions and of the explanation sheets for biological monitoring results;

§ 1926.1127(n)(3)(ii)(C) - A copy of the medical history, and the results of any physical examination and all test results that are required to be provided by this section, including biological tests, X-rays, pulmonary function tests, etc., or that have been obtained to further evaluate any condition that might be related to cadmium exposure;

§ 1926.1127(n)(3)(ii)(D) - The employee's medical symptoms that might be related to exposure to cadmium; and

§ 1926.1127(n)(3)(ii)(E) - A copy of the information provided to the physician as required by paragraph (l)(9) of this section.

§ 1926.1127(n)(3)(iii) - The employer shall assure that this record is maintained for the duration of employment plus thirty (30) years, in accordance with 1926.33 of this part.

§ 1926.1127(n)(3)(iv) - At the employee's request, the employer shall promptly provide a copy of the employee's medical record, or update as appropriate, to a medical doctor or a union specified by the employee.

Purpose: These records permit employers, workers, and other interested parties (e.g., worker representatives) to assess the effectiveness of exposure controls by conducting a proper evaluation of worker health, identify the development of Cd-related diseases, determine appropriate treatment and follow-up, and assess the effectiveness of medical interventions. The prolonged retention period (i.e., duration of employment plus 30 years) is necessary because of the long latency periods associated with the manifestation of Cd-related diseases.

Availability (§ 1926.1127(n)(4))

§ 1926.1127(n)(4)(i) - Except as otherwise provided for in this section, access to all records

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required to be maintained by paragraphs (n)(1)-(3) of this section shall be in accordance with the provisions of 29 CFR 1910.1020⁴

§ 1926.1127(n)(4)(ii) - Within 15 days after a request, the employer shall make an employee's medical records required to be kept by paragraph (n)(3) of this section available for examination and copying to the subject employee, to designated representatives, to anyone having the specific written consent of the subject employee, and after the employee's death or incapacitation, to the employee's family members.

Purpose: Workers and their designated representatives use exposure-monitoring and medical-surveillance records to assess worker medical status over the course of employment, to evaluate the effectiveness of the employer's exposure-reduction program. Accordingly, access to these records is necessary to provide both direct and indirect improvements in the detection, treatment, and prevention of Cd-related medical effects.

Transfer of Records (§1926.1127(n)(5))

Whenever an employer ceases to do business and there is no successor employer or designated organization to receive and retain records for the prescribed period, the employer shall comply with the requirements concerning transfer of records set forth in 1926.33(h) of this part.

Purpose: Section 1926.33 is identical to § 1910.1020, of which paragraph (h) 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.

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. In

this regard, the employer would communicate the location of all records, including worker exposure-monitoring and medical records, at the facility to the successor employer during the transfer of business operations, as a matter of usual and customary business practice.

3. Describe whether, and to what extent, the collection of information involves the use of automated,

⁴ The Agency has determined that the requirement for employers to make records available upon request to the Assistant Secretary is no longer considered a collection of information. OSHA typically requests access to records during an inspection, and information collected by the Agency during the investigation is not subject to the PRA under 5 CFR 1320.4(a)(2). While NIOSH may use records collected from employers for research purposes, the Agency does not anticipate NIOSH to request employers to make available records during the approval period. Therefore, the burden for the employer to make this information available to NIOSH is zero.

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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 burdens.

Employers may use electronic 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 for the purposes described in Item A.2. above.**

The information collection requirements of the 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.**

The information collection requirements of the Standard do not have a significant impact on a substantial number of small entities.

- 6. Describe the consequence 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 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 Cd exposure.

- 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;

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- **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 reviewed and approved by OMB;**
- **That includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or**
- **Requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.**

Under paragraph (d)(5) of the Standard, employers must inform workers, in writing or by posting, of exposure monitoring results no later than five working days after obtaining the results. If these results indicate that a worker's exposures are above the PEL, the notification must state this fact and describe what corrective actions the employer is taking to reduce the worker's exposure to or below the PEL. (In addition, under OSHA's Access to Employee Exposure and Medical Records Standard (§1910.1020), employers must maintain the exposure monitoring results for 30 years. OSHA accounts for the burden hours and costs related to the retention of these records under the Information Collection Request (ICR) for §1910.1020, OMB Control No. 1218-0065.

Additionally, paragraph (l)(15) of the Standard requires employers to provide workers with a copy of the physician's written opinion regarding their medical examination and a copy of the worker's biological-monitoring results, including an written explanation of the results, within five working days of obtaining the results.

8. If applicable, provide a copy and identify the date 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.

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Pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3506(c)(2)(A)), OSHA published a notice in the *Federal Register* on November 29, 2019 (84 FR 65844 Docket No. OSHA-2012-0004) soliciting comments from the public and other interested parties on the information collection requirements contained in the Cadmium in Construction Standard (29 CFR 1926.1127).. The notice is part of a preclearance consultation program that provides interested parties with an opportunity to comment on OSHA’s request for an extension by the Office of Management and Budget (OMB) of a previous approval of the information collection requirements found in the above standard. The Agency did not receive any public comments for this information collection request.

- 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.

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

Perceived questions of a sensitive nature may be included in medical questionnaires. Information from medical questionnaires is necessary for the PLHCP or physician, or employer, to determine what protections an employer must take to ensure that the employee will have minimal occupational exposure to hazards such as, insufficient oxygen environments, harmful dusts, fogs, smokes, mists, gases, vapors, and sprays.

- 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.

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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 cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage-rate categories.

Burden Hour and Cost Determinations

Based on figures from the U.S. Census Bureau, the Bureau of Labor Statistics, the U.S. Geological Survey, overall, U.S. domestic consumption of cadmium has decreased over 78 percent since 1999 (from 2,220 to 490 metric tons in 2011⁵), as consumption for use in traditional end uses of cadmium – specifically coatings, pigment, and stabilizers – have decreased dramatically in response to environmental and health concerns.

While the exposure of workers to cadmium in construction industries has likely declined in recent years as has the overall consumption of cadmium, OSHA is unable to determine the extent to which exposures have declined in specific occupation, the frequency with which workers are currently exposed, and also the specific industry tasks and occupations for which cadmium exposure is expected. While OSHA believes exposures likely have decreased, without specific updated data, OSHA has retained the existing estimates regarding the number of construction sites, employers and workers covered by the Standard.

The following hourly wage rates for the relevant occupational categories have been derived from the *National Occupational Employment and Wage Estimates United States, May 2018*, published by the Bureau of Labor Statistics.⁶ These wages have been adjusted to reflect the fact that fringe benefits comprise roughly 31.4 percent of total worker compensation in the private sector.⁷ The

⁵Mineral Commodity Summaries 2012, U.S. Department of Interior, U.S. Geological Survey (<http://minerals.usgs.gov/minerals/pubs/commodity/cadmium/mcs-2012-cadmi.pdf>). Note: For the same U.S. Geological Survey data source in years 2013, 2014 and 2015, the U.S. Geological Survey has withheld cadmium consumption data to avoid disclosing company proprietary data. See, for example, the Mineral Commodity Summaries 2015: <http://minerals.usgs.gov/minerals/pubs/commodity/cadmium/mcs-2015-cadmi.pdf>.

⁶Source: Bureau of Labor Statistics, *National Occupational Employment and Wage Estimates United States, May 2018*. Occupational Codes and Titles (mean hourly wage): 47-1011, First-Line Supervisors of Construction Trades and Extraction Workers (\$41.25); 47-2000, Construction Trades Workers (\$28.27); 43-6014, Secretaries and Administrative Assistants, Except Legal, Medical and Executive (\$21.859). (http://www.bls.gov/oes/release_archive.htm)

⁷Source: Bureau of Labor Statistics. *National Compensation Survey. Employer Costs for Employee Compensation – September 2019*. (Source: https://www.bls.gov/news.release/archives/ecec_09172019.pdf).

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costs of labor used in this analysis are therefore estimates of total hourly compensation. These hourly wages are:

- Construction Supervisor (including competent person) \$49.43
- Non-Supervisory Construction Worker \$34.94
- Clerical/Secretary \$26.65

Exposure Monitoring (§1926.1127(d))

Initial Monitoring (§1926.1127(d)(2)(i) and (d)(2)(ii))

The Regulatory Impact Analysis (RIA) for the final Standard (conducted in 1992) estimates that, each year, 10,000 construction sites have Cd present. OSHA estimates that a competent person (i.e., construction worker) spends 15 minutes (.25 hour) conducting initial monitoring at each site. Therefore, the total annual burden hours and cost to employers for this information-collection requirement are:

Burden hours: 10,000 sites × .25 hour = 2,500 hours
Cost: 2,500 hours × \$34.94 = \$87,350

Objective Data (§1926.1127(d)(2)(iii))

The Agency believes that few, if any, employers currently use objective data to demonstrate that workers' Cd exposures are below the AL. Therefore, the annual burden hours and cost of this requirement is minimal; accordingly, OSHA is assuming that this provision imposes no burden hours or cost on employers.

Reporting Exposures Below the AL (§1926.1127(d)(2)(iv))

The RIA finds that 63,000 workers have Cd exposures below the AL at construction sites where Cd is present, and that each of these workers works at three such sites each year (requiring employers to make three Cd-exposure determinations for each of these workers). OSHA assumes that a competent person takes five minutes (0.08 hour) to make and record this determination for

each of these workers. Accordingly, the estimated yearly burden hours and cost of this information collection requirement are:

Burden hours: 63,000 workers × 3 determinations/year × .08 hour = 15,120 hours
Cost: 15,120 hours × \$34.94 = \$528,293

Monitoring Frequency (Periodic Monitoring) (§1926.1127(d)(3))

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The RIA estimates that 7,000 employees have Cd exposures at or above the AL and require periodic exposure monitoring. The Agency assumes that employers use representative sampling for this purpose and that, on average, each of these samples represents the Cd exposures of three employees; therefore, employers collect a total of 2,333 samples to monitor these employees once (i.e., 7,000 employees ÷ 3 employees per sample). OSHA estimates that a supervisor collects three samples from these employees three times a year, and that each sample takes 30 minutes (.50 hour) to collect. The Agency determines the yearly burden hours and cost of this paperwork requirement to be:

Burden hours: 2,333 samples × 3 collections/year × .50 hour = 3,500 hours
Cost: 3,500 hours × \$49.43 = \$173,005

Additional Monitoring (§1926.1127(d)(4))

OSHA assumes that employers collect an additional 500 exposure-monitoring samples each year because they suspect a change in employee Cd exposure. Therefore, the annual estimated burden hours and cost of this provision are:

Burden hours: 500 samples × .50 hour = 250 hours
Cost: 250 hours × \$49.43 = \$12,358

Employee Notification of Monitoring Results (§1926.1127(d)(5))

The Agency believes that a secretary takes five minutes (.08 hour) to inform employees by posting exposure-monitoring results.⁸ OSHA estimates that the 10,000 construction sites have approximately 70,000 covered employees or an average of seven employees per site. With an estimated 7,000 employees having Cd exposures at or above the AL, and assuming seven employees per site, then about 1,000 sites will post notifications 3 times per year. The Agency assumes that each of the 500 samples is taken at different construction sites. Therefore, the burden hour and cost estimates for this provision each year are:

Burden hours: ((1,000 sites × 3 times) + 500 sites) × .08 hour = 280 hours
Cost: 280 hours × \$26.65 = \$7,462

Compliance Program (§1926.1127(f)(5))

⁸This notification burden also includes posting the results at an accessible location, and maintaining the individual record as required by paragraph (n)(1).

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OSHA assumes that employers at 10 percent (i.e., 1,000) of the 10,000 construction sites at which Cd is present update their written compliance programs each year. The Agency estimates that a competent person (supervisory wage rate) spends 30 minutes (.5 hour) updating the program, resulting in yearly burden-hour and cost estimates of:

Burden hours:	1,000 updates × .5 hour = 500 hours
Cost:	500 hours × \$49.43 = \$24,715

Emergency Situations (§1926.1127(h))

OSHA believes that no substantial releases of Cd occur under emergency situations. Therefore, the Agency is assuming that this provision imposes no annual burden hours or cost on employers.

Notification of Laundry Personnel (§1926.1127(i)(3)(v))

The Agency assumes that employers change laundries infrequently; accordingly, the need to provide the specified information to those who clean and launder Cd-contaminated protective clothing or equipment is minimal. Thus, OSHA concludes that this requirement results in no burden hours or cost to employers.

Medical Surveillance (§1926.1127(l))

Initial Examination; Actions Triggered by Initial Biological Monitoring; Periodic Medical Surveillance; Actions Triggered by Medical Examinations; Examinations for Respirator Use; Emergency Examinations; and Termination of Employment Examination (§1926.1127(l)(2) through (§1926.1127(l)(8)).

The RIA estimates that employers administer 3,500 initial and periodic medical examinations each year as required by paragraphs (l)(2) through (l)(4). OSHA believes that an additional 250 medical examinations result from the requirements of paragraphs (l)(5) through (l)(8). The RIA also finds that employers collect 7,250 urine samples for analyzing CdU and β_2 -MU, and an

additional 7,250 blood samples for analyzing CdB, for a total of 14,500 biological-monitoring samples.

The Agency finds that it takes 1.5 hours (including 30 minutes travel time) to administer a medical examination to an employee (i.e., construction worker), and an additional 15 minutes (.25 hour) to collect either a blood or urine sample from an employee for biological monitoring. Accordingly, OSHA determines the yearly burden hours and cost of this requirement to be:

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Burden hours: $(3,750 \text{ medical examinations} \times 1.5 \text{ hour}) + (14,500 \text{ biological-monitoring samples} \times .25 \text{ hour}) = 9,250 \text{ hours}$
Cost: $9,250 \text{ hours} \times \$34.94 = \$323,195$

Information Provided to the Physician (§1926.1127(l)(9))

The Agency assumes that employers provide the required information to the physician prior to each medical examination and biological-monitoring collection (i.e., urine and blood collections combined). Therefore, employers must provide this information before the 3,750 medical examinations and 7,250 biological-monitoring collections administered annually, for a total of 11,000 administrations. Assuming that a secretary requires five minutes (.08 hour) to compile and send the information to the physician prior to each administration, the annual burden-hour and cost estimates for this paperwork requirement are:

Burden hours: $11,000 \text{ administrations} \times .08 \text{ hour} = 880 \text{ hours}$
Cost: $880 \text{ hours} \times \$26.65 = \$23,452$

Physician's Written Medical Opinion (§1926.1127(l)(10))

OSHA assumes that the physician writes an opinion for each medical examination and biological-monitoring collection administered (for a total of 11,000 written opinions annually), and that a secretary takes five minutes (.08 hour) to distribute a written opinion to an employee.⁹ Thus, the estimated burden hours and cost of this requirement are:

Burden hours: $11,000 \text{ written opinions} \times .08 \text{ hour} = 880 \text{ hours}$
Cost: $880 \text{ hours} \times \$26.65 = \$23,452$

Communication of Cadmium Hazards to Employees (§1926.1127(m), (i)(2)(iv) and (k)(7))

Warning Signs and Warning Labels (§1926.1127(m)(2) and (m)(3))

See Item 2, above.

Employee Information and Training (§1926.1127(m)(4))

See Item 2 above.

⁹The five minutes includes the annual burden for maintaining a record of each written opinion as required by paragraph (n)(3).

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Recordkeeping (§1926.1127(n))

Exposure Monitoring (§1926.1127(n)(1))

The Agency assigned the burden hours and cost of this recordkeeping requirement to paragraph (d)(5) (see “Employee Notification of Monitoring Results (§1926.1127(d)(5))” above).

Objective Data for Exemption from Requirement for Initial Monitoring (§1926.1127(n)(2))

OSHA assigned no burden hours and cost to this requirement (see comment under “Objective Data (§ 1926.1127(d)(2)(iii))” above).

Medical Surveillance (§1926.1127(n)(3))

The Agency assigned the burden hours and cost of this recordkeeping requirement to paragraph (l)(10) (see “Physician's Written Medical Opinion (§1926.1127(l)(10))” above).

Availability (1926.1127 (n)(4))

The Agency assumes that 10 percent (7,000) of the 70,000 employees potentially exposed to Cd request to see their records each year.¹⁰ OSHA estimates that a secretary requires five minutes (.08 hour) making these records available to each employee. Therefore, the estimated annual burden hours and cost for this requirement are:

Burden hours: 7,000 employees x .08 hours = 560 hours
Cost: 560 hours × \$26.65 = \$14,924

Table 1 – Summary of Respondent Hour and Cost Burden

Information Collection Requirement (Across Top of Rows)	Type of Respondent	No. of Respondents	No. of Responses per Respondent	Total No. of Responses	Avg. Burden per Response (in Hrs.)	Total Burden Hours (rounded)	Avg. Hourly Wage Rate	Total Burden Costs (rounded)
(A) Exposure-								

¹⁰This figure includes parties acting on an employee's behalf (i.e., their designated representatives, parties with the employee's written consent, and family members).

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monitoring and Measurement								
Initial Monitoring	Construction Worker	10,000	1	10,000	0.25	2,500	\$34.94	\$87,350
Reporting Exposure Below AL	Construction Worker	10,000	18.9	189,000	0.08	15,120	\$34.94	\$528,293
Periodic Monitoring	Supervisor	10,000	0.7	7,000	0.5	3,500	\$49.43	\$173,005
Additional Monitoring	Supervisor	10,000	0.05	500	0.5	250	\$49.43	\$12,358
<i>Subtotal - Monitoring</i>				206,500		21,370		\$801,006
(B) Employee Notification	Administrative Assistant	10,000	0.3	3,000	0.08	240	\$26.65	\$6,396
	Administrative Assistant	10,000	0.05	500	0.08	40	\$26.65	\$1,066
<i>Subtotal - Employee Notification</i>				3,500		280		\$7,462
(C) Compliance Program	Supervisor	10,000	0.1	1,000	0.5	500	\$49.43	\$24,715

Information Collection Requirement (Across Top of Rows)	Type of Respondent	No. of Respondents	No. of Responses per Respondent	Total No. of Responses	Avg. Burden per Response (In Hrs.)	Total Burden Hours (rounded)	Avg. Hourly Wage Rate	Total Burden Costs (rounded)
(D) Medical Surveillance								
Medical Examinations	Construction Worker	10,000	0.375	3,750	1.5	5,625	\$34.94	\$196,537

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Biological Monitoring Samples	Construction Worker	10,000	1.45	14,500	0.25	3,625	\$34.94	\$126,658
Information provided to Physician	Administrative Assistant	10,000	1.1	11,000	0.08	880	\$26.65	\$23,452
Physician's Written Opinion	Administrative Assistant	10,000	1.1	11,000	0.08	880	\$26.06 5	\$23,452
<i>Subtotal - Medical Examinations</i>				40,250		11,010		\$370,099
(E) Recordkeeping								
Availability	Administrative Assistant	10,000	0.7	7,000	0.08	560	\$26.65	\$14,924
TOTAL				258,250		33,720		\$1,218,206

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 service 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 of 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 collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondent (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.

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Capital Cost Determinations

In determining the capital cost of these paperwork requirements, OSHA used the information and data from Item 12 above. From these determinations, the Agency estimates that the total capital cost of these requirements is \$2,082,199.

(A) Exposure Monitoring

The 2015 ICR indicated that employers paid \$51 to analyze an exposure-monitoring sample.¹¹ According to the information provided under “Exposure Monitoring (§1926.1127(d))” above, employers collect three exposure-monitoring samples per year from 2,333 representative employees, for a total of 6,999 samples (i.e., 2,333 employees × 3 samples), and another 500 exposure-monitoring samples annually when they suspect a change in employee Cd exposure. Thus, the capital cost each year associated with obtaining exposure-monitoring samples is:

$$\text{Cost: } (6,999 \text{ samples} + 500 \text{ samples}) \times \$51 = \$382,449$$

(B) Medical Surveillance

Based on information from a large occupational medicine practice that performs medical exams on Cd-exposed workers, the cost for the medical exam required by the Standard is currently estimated to be at \$200 per exam. For biological testing, current costs are as follows: β_2 -MU (beta-2 microglobulin in urine) - \$69; CdU (cadmium in urine) - \$31; and CdB (cadmium in blood) - \$31. According to “Medical Surveillance (§ 1926.1127(l))” above, employers provide 3,750 annual medical examinations, and analyze 21,750 biological-monitoring samples for CdU, CdB, and β_2 -MU (i.e., 7,250 samples for each substance).¹² The yearly capital cost of the medical-surveillance requirements is:

$$\text{Cost: } (3,750 \text{ medical examinations} \times \$200) + ((7,250 \text{ CdU samples} + 7,250 \text{ CdB samples}) \times \$31) + (7,250 \beta_2\text{-MU samples} \times \$69) = \$1,699,750$$

- 14. Provide estimates of annualized cost to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not**

¹¹The ICR maintains the \$51.00 monitoring cost estimate.

¹²While the information under “Medical Surveillance (§1926.1127(l))” indicates that employers perform 7,250 urine collections and 7,250 blood collections annually, laboratories divide the urine collections into two parts for analyzing CdU and β_2 -MU separately; the resulting 14,500 urine samples, when added to 7,250 blood samples, result in a total of 21,750 biological-monitoring samples.

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have been incurred without this collection of information. Agencies also may aggregate cost estimates from Items 12, 13, and 14 in a single table.

There is no cost to the Federal Government.

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

The Agency is requesting no change in the previous burden hour estimate of 33,720 hours. There are no program changes or adjustments associated with the information collection requirement in the Cadmium in Construction Standard.

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 information, completion of report, publication dates, and other actions.

OSHA will not publish the information collected under the Standard.

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

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. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS.

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

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