

**SUPPORTING STATEMENT FOR THE  
INFORMATION COLLECTION REQUIREMENTS IN  
THE CADMIUM IN CONSTRUCTION STANDARD (29 CFR 1926.1127)<sup>1</sup>  
(OMB CONTROL NO. 1218-0186 (February 2009))**

**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 employee 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 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 employee cadmium (Cd) exposure (§1926.1127; the Standard"). OSHA based the Standard on a determination that occupational exposure to Cd poses a hazard to employees. This determination showed Cd exposure may cause lung cancer, prostate cancer, non-malignant respiratory disease, acute pneumonitis, fever and chest pain,

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<sup>1</sup>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.

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 to use operations that substantially reduce employee 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 and social security number of each employee.

**Purpose:** This information provides assurance to employees, 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 employees of the need to protect employees against the effects of overexposure to Cd. These monitoring data will also inform the examining physician of the existence and extent of an employee's Cd exposures for use in assessing the employee'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.

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

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 employees 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 employee 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 employees regarding planned controls. The requirement to prepare and update the written 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. The written program also assures OSHA, NIOSH, employees, and their representatives that employers are taking necessary and appropriate measures to protect employees from hazardous Cd exposures.

### **Respirator 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).

**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 employees with information to maximize their personal protection and minimize Cd exposures under these conditions.

### **Storing Cadmium-Contaminated Protective Clothing and Equipment (§1926.1127(i)(2)(iv))**

The employer shall assure that containers of contaminated protective clothing and equipment 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)(2) 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.

### **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.

### **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)(2) 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) - 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:

§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) - 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 musculo-skeletal 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 (B(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).

§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, B(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, B(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 (1)(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 (1)(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 (1)(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 (1)(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 (1)(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;

§1926.1127(l)(4)(ii)(C) - A 14 inch by 17 inch, or a reasonably standard sized 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.

*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.

*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;

§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 B(2)-M 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)(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.

*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 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 employee health. Physicians use these records to determine the extent to which employees, 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 an employee'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 employees 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 employee'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 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 employee's initial job assignments, and to assess the employee's ability to use protective clothing and equipment. The physician's written opinion also informs the employer about whether the employee has a condition indicating Cd overexposure; the prohibition against providing the employer with information 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 employees 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 employees who have these impairments an opportunity to recuperate and return to their former jobs.

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

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 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 employee 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 employees. If the medical opinion provided by the employer's physician could result in job removal, and no opportunity exists for employees 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 employees to determine the need for, and to evaluate the effectiveness of, treatments and other interventions.

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

*Warning Signs (§1926.1127(m)(2))*

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.

§1926.1127(m)(2)(ii) - Warning signs required by paragraph (m)(2)(i) of this section shall bear the following information: DANGER – CADMIUM - CANCER HAZARD - CAN CAUSE LUNG AND KIDNEY DISEASE - AUTHORIZED PERSONNEL ONLY - RESPIRATORS REQUIRED IN THIS AREA.

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

**Purpose:** Posting warning signs informs employees that they are entering a regulated area, and that they must have proper authorization before entering such an area. Warning signs allow employees and others to take the precautions necessary to avoid harmful Cd exposures; in addition, the signs supplement employee training by specifying the limits of regulated areas.

#### *Warning Labels (§1926.1127(m)(3))*

§1926.1127(m)(3)(ii) - The warning labels shall include at least the following information: DANGER - CONTAINS CADMIUM - CANCER HAZARD - AVOID CREATING DUST - CAN CAUSE LUNG AND KIDNEY DISEASE.

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

**Purpose:** Warning labels inform downstream employers and employees 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 employees under the Standard.

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

§1926.1127(m)(4)(i) - The employer shall institute a training program for all employees who are potentially exposed to cadmium, assure employee participation in the program, and maintain a record of the contents of such program.

§1926.1127(m)(4)(ii) - Training shall be provided prior to or at the time of initial assignment to a job involving potential exposure to cadmium and at least annually thereafter.

§1926.1127(m)(4)(iii) - The employer shall make the training program understandable to the employee and shall assure that each employee is informed of the following:

§1926.1127(m)(4)(iii)(A) - The health hazards associated with cadmium exposure, with special attention to the information incorporated in Appendix A to this section;

§1926.1127(m)(4)(iii)(B) - The quantity, location, manner of use, release, and storage of cadmium in the workplace and the specific nature of operations that could result in exposure to cadmium, especially exposures above the PEL;

§1926.1127(m)(4)(iii)(C) - The engineering controls and work practices associated with the employee's job assignment;

§1926.1127(m)(4)(iii)(D) - The measures employees can take to protect themselves from exposure to cadmium, including modification of such habits as smoking and personal hygiene, and specific procedures the employer has implemented to protect employees from exposure to cadmium such as appropriate work practices, emergency procedures, and the provision of personal protective equipment;

§1926.1127(m)(4)(iii)(E) - The purpose, proper selection, fitting, proper use, and limitations of respirators and protective clothing;

§1926.1127(m)(4)(iii)(F) - The purpose and a description of the medical surveillance program required by paragraph (l) of this section;

§1926.1127(m)(4)(iii)(G) - The contents of this section and its appendices, and,

§1926.1127(m)(4)(iii)(H) - The employee's rights of access to records under 1926.33(g)(1) and (2).

*Additional access to information and training program and materials §1926.1127(m)(4)(iv)*

§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.

§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.

**Purpose:** An employer's information and training program provides employees with information on the health hazards resulting from Cd exposure and with the understanding necessary to minimize these hazards. This program serves to explain and reinforce the information presented to employees on signs, labels, and material safety data sheets; however, this information will be effective only when employees understand the information and can take the actions necessary to avoid or minimize Cd exposure. Training also enables employees to recognize operations and locations associated with Cd exposures, thereby permitting them to limit Cd exposure from these



sources. Providing the program materials to OSHA ensures that employers are in compliance with the program requirements, while NIOSH may review the materials for research and other purposes.

### **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, social security number, 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;

§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, employees, OSHA, and other interested parties (i.e., industry trade associations and employee unions, or comparable organizations) can identify the levels, durations, and extent of Cd exposure, determine if existing controls are protecting employees 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 employees are receiving adequate protection from Cd exposure. In addition, employees and their representatives have access to these records, thereby providing assurance that the employer's use of the objective data is reasonable.

*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, social security number, 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 (1)(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, employees, and other interested parties (e.g., employee representatives) to assess the effectiveness of exposure controls by conducting a proper evaluation of employee 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.

#### *Training Records (§ 1926.1127(n)(4))*

The employer shall certify that employees have been trained by preparing a certification record which includes the identity of the person trained, the signature of the employer or the person who conducted the training, and the date the training was completed. The certification records shall be prepared at the completion of training and shall be maintained on file for one (1) year beyond the date of training of that employee.

**Purpose:** This requirement allows employers and employees to determine when to update training, and permits OSHA to ascertain whether employees are receiving appropriate and timely training.

#### *Availability (§ 1926.1127(n)(5))*

§ 1926.1127(n)(5)(i) - Except as otherwise provided for in this section, access to all records required to be maintained by paragraphs (n)(1)-(4) of this section shall be in accordance with the provisions of 1926.33 of this part.

§ 1926.1127(n)(5)(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:** Employees and their designated representatives use exposure-monitoring and medical-surveillance records to assess employee medical status over the course of employment, to evaluate the effectiveness of the employer's exposure-reduction program, and for other reasons. 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)(6))*

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:** These records may be used by NIOSH for research purposes, and by employees for health assessments and other reasons.

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

Employers may use electronic information technology when establishing and maintaining the required records, with the exception of training records (which require a signature). 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 2 above.**

The information collection requirements of the Standard are specific to each employer and employee 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 (Item 5 of OMB Form 83-I), 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 employees, 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.**
  - **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.**
  - **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 employees, in writing or by posting, of exposure monitoring results no later than five working days after obtaining the results. If these results indicate that an employee's exposures are above the PEL, the notification must state this fact and describe what corrective actions the employer is taking to reduce the employee's exposure to or below the PEL. Additionally, paragraph (l)(15) of the Standard requires employers to provide employees with a copy of the physician's written opinion regarding their medical examination and a copy of the employee'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 3 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.**

As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3506(c)(2)(A)), OSHA published a **Federal Register** on December 5, 2008 (73 FR 74197, Docket No. OSHA-2008-0051) notice soliciting comments from the public and other interested parties on the information collection requirements contained in the Cadmium in Construction Standard. This notice was part of a pre-clearance consultation program that provides interested parties with an opportunity to comment on OSHA's request for an extension by OMB of a previous approval of the information collection requirements found in the Cadmium in Construction Standard. The Agency did not receive any comments regarding the proposed information collection request.

- 9. Explain any decision to provide any payment or gift to respondents, other than reenumeration 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.**

The paperwork requirements specified by the Standard do not require the collection of sensitive information.

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

- **Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.**

- **If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens in Item 13 of OMB Form 83-I.**
- **Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage-rate categories.**

Table 1 below provides a summary of burden hour and cost estimates for the information collection requirements specified by the Standard.

**Table 1**  
**Summary of Annual Burden Hour and Cost Estimates**

| <b>Information Collection Requirement</b>                                                                                                                                                                                                 | <b>Existing Hours</b> | <b>Proposed Hours</b> | <b>Change</b> | <b>Estimated Cost</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|---------------|-----------------------|
| <b>Exposure Monitoring</b>                                                                                                                                                                                                                |                       |                       |               |                       |
| Initial Monitoring                                                                                                                                                                                                                        | 2,500                 | 2,500                 | 0             | \$70,625              |
| Objective Data                                                                                                                                                                                                                            | 0                     | 0                     | 0             | \$0                   |
| Reporting Exposures Below the AL                                                                                                                                                                                                          | 15,120                | 15,120                | 0             | \$427,140             |
| Monitoring Frequency (Periodic Monitoring)                                                                                                                                                                                                | 3,500                 | 3,500                 | 0             | \$124,915             |
| Additional Monitoring                                                                                                                                                                                                                     | 250                   | 250                   | 0             | \$8,923               |
| Employee Notification of Monitoring Results                                                                                                                                                                                               | 280                   | 280                   | 0             | \$5,762               |
| <b>Compliance Program</b>                                                                                                                                                                                                                 | 500                   | 500                   | 0             | \$17,845              |
| <b>Respirator Protection</b>                                                                                                                                                                                                              |                       |                       |               |                       |
| Respirator Program                                                                                                                                                                                                                        | 0                     | 0                     | 0             | \$0                   |
| <b>Emergency Situations</b>                                                                                                                                                                                                               | 0                     | 0                     | 0             | \$0                   |
| <b>Notification of Laundry Personnel</b>                                                                                                                                                                                                  | 0                     | 0                     | 0             | \$0                   |
| <b>Medical Surveillance</b>                                                                                                                                                                                                               |                       |                       |               |                       |
| 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 | 9,250                 | 9,250                 | 0             | \$261,313             |
| Information Provided                                                                                                                                                                                                                      | 880                   | 880                   | 0             | \$18,110              |

| <b>Information Collection Requirement</b>                            | <b>Existing Hours</b> | <b>Proposed Hours</b> | <b>Change</b> | <b>Estimated Cost</b> |
|----------------------------------------------------------------------|-----------------------|-----------------------|---------------|-----------------------|
| to the Physician                                                     |                       |                       |               |                       |
| Physician's Written Medical Opinion                                  | 880                   | 880                   | 0             | \$18,110              |
| <b>Communication of Cd Hazards to Employees</b>                      |                       |                       |               |                       |
| Warning Signs and Warning Labels                                     | 0                     | 0                     | 0             | \$0                   |
| Employee Information and Training                                    | 3,500                 | 3,500                 | 0             | \$124,915             |
| <b>Recordkeeping</b>                                                 |                       |                       |               |                       |
| Exposure Monitoring                                                  | 0                     | 0                     | 0             | \$0                   |
| Objective Data for Exemption from Requirement for Initial Monitoring | 0                     | 0                     | 0             | \$0                   |
| Medical Surveillance                                                 | 0                     | 0                     | 0             | \$0                   |
| Training Records                                                     | 2,100                 | 2,100                 | 0             | \$43,218              |
| Availability                                                         | 571                   | 571                   | 0             | \$11,917              |
| Transfer of Records                                                  | 0                     | 0                     | 0             | \$0                   |
| <b>Totals</b>                                                        | <b>39,331</b>         | <b>39,331</b>         | <b>0</b>      | <b>\$1,132,794</b>    |

### **Burden Hour and Cost Determinations**

Based on figures from U.S. Census Bureau, the Bureau of Labor Statistics, the U.S. Geological Survey, overall, U.S. domestic consumption of cadmium has decreased over 80 percent since 1999 (from 2,220 to 441 metric tons), 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 occupations, 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 employees covered by the Standard.

The following hourly wage rates for the relevant occupational categories have been derived from the National Compensation Survey (NCS), published by the Bureau of Labor Statistics.<sup>2</sup> These wages have

<sup>2</sup> Source: Bureau of Labor Statistics, National Compensation Survey: Occupational Wages in the United States, June



been adjusted to reflect the fact that fringe benefits comprise roughly 29.4 percent of total employee compensation in the private sector.<sup>3</sup> The costs of labor used in this analysis are therefore estimates of total hourly compensation. These hourly wages are:

- Construction Supervisors (including competent person) \$35.69
- Non-Supervisory Construction Workers \$28.25
- Clerical/Secretary \$20.58

### **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 × \$28.25 = \$70,625

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

The Agency believes that few, if any, employers currently use objective data to demonstrate that employees' 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 employees have Cd exposures below the AL at construction sites where Cd is present, and that each of these employees works at three such sites each year (requiring employers to make three Cd-exposure determinations for each of these employees). OSHA assumes that a competent person takes five minutes (0.08 hour) to make and record this determination for each of these employees. Accordingly, the estimated yearly burden hours and cost of this information-collection requirement are:

**Burden hours:** 63,000 employees × 3 determinations/year × .08 hour = 15,120 hours  
**Cost:** 15,120 hours × \$28.25 = \$427,140

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

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

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2006 Supplementary Tables. Published August 2007. Supplementary Table 1.1: United States, selected occupations: Mean hourly earnings and percentiles, all workers, National Compensation Survey, September 2007.

<sup>3</sup> Source: Bureau of Labor Statistics. *Employer Costs for Employee Compensation – March 2008*. June 11, 2008.

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:**  $2,333 \text{ samples} \times 3 \text{ collections/year} \times .50 \text{ hour} = 3,500 \text{ hours}$   
**Cost:**  $3,500 \text{ hours} \times \$35.69 = \$124,915$

#### 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:**  $500 \text{ samples} \times .50 \text{ hour} = 250 \text{ hours}$   
**Cost:**  $250 \text{ hours} \times \$35.69 = \$8,923$

#### 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.<sup>4</sup> 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 are taken at different construction sites. Therefore, the burden-hour and cost estimates for this provision each year are:

**Burden hours:**  $((1,000 \text{ sites} \times 3 \text{ times}) + 500 \text{ sites}) \times .08 \text{ hour} = 280 \text{ hours}$   
**Cost:**  $280 \text{ hours} \times \$20.58 = \$5,762$

#### **Compliance Program (§1926.1127(f)(5))**

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:**  $1,000 \text{ updates} \times .5 \text{ hour} = 500 \text{ hours}$   
**Cost:**  $500 \text{ hours} \times \$35.69 = \$17,845$

#### **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))**

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<sup>4</sup> This notification burden also includes posting the results at an accessible location, and maintaining the individual record as required by paragraph (n)(1).

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  $\beta_2$ -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:

**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:**  $9,250 \text{ hours} \times \$28.25 = \$261,313$

### 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:**  $880 \text{ hours} \times \$20.58 = \$18,110$

### 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.<sup>5</sup> Thus, the estimated burden hours and cost of this requirement are:

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<sup>5</sup> The five minutes includes the annual burden for maintaining a record of each written opinion as required by paragraph (n)(3).

**Burden hours:** 11,000 written opinions × .08 hour = 880 hours  
**Cost:** 880 hours × \$20.58 = \$18,110

### **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))

The 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”).

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

The Standard requires annual training for employees potentially exposed to Cd. Using the information under "Exposure Monitoring (§1926.1127(d))" above, OSHA estimates that 70,000 employees require annual training, including 63,000 employees having Cd exposures below the AL and 7,000 additional employees with Cd exposures at or above the AL.

The Agency assumes that a construction supervisor can deliver the required training to 20 employees in a single session, for a total of 3,500 sessions to train 70,000 employees annually (i.e., 70,000 employees ÷ 20 employees per session). In addition, OSHA estimates that, for each session, the supervisor requires 15 minutes (.25 hour) to prepare the training material and 45 minutes (.75 hour) to deliver it, for a total of one hour.<sup>6</sup> Therefore, the annual burden hours and cost associated with this training provision are:

**Burden hours:** 3,500 sessions × 1 hour = 3,500 hours  
**Cost:** 3,500 hours × \$35.69 = \$124,915

### **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).

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<sup>6</sup> OSHA is assigning no burden hours or cost to developing training programs because paragraph (p)(viii) of the Standard requires implementation of training programs no later than June 24, 1993. This conclusion assumes that existing programs require no major revisions, and that the Standard will apply to no new employers.

### Training Records (§1926.1127(n)(4))

Under “Employee Information and Training (§1926.1127(m)(4))” above, OSHA estimated that 70,000 employees require yearly training. Assuming that a secretary takes an average of two minutes (.03 hour) each year to compile and maintain a training record, the annual burden-hour and cost estimates for this recordkeeping requirement are:

**Burden hours:** 70,000 employees × .03 hour = 2,100 hours  
**Cost:** 2,100 hours × \$20.58 = \$43,218

### Availability (§1926.1127(n)(5))

The Agency estimates that its compliance officers conduct 140 inspections annually at construction sites covered by the Standard and that they request all required records at each site.<sup>7</sup> OSHA believes that a construction supervisor spends five minutes (.08 hour) during each inspection informing a compliance office about the location of these records, for a total of 11 hours (i.e., 140 inspections × .08 hour). In addition, the Agency assumes that 10 percent (7,000) of the 70,000 employees potentially exposed to Cd request to see their records each year.<sup>8</sup> OSHA estimates that a secretary requires five minutes (.08 hour) making these records available to each employee, for a total of 560 hours (i.e., 7,000 employees × .08 hour). Therefore, the estimated annual burden hours and cost for this requirement are:

**Burden hours:** 11 hours (for inspections) + 560 hours (for employees) = 571 hours  
**Cost:** (11 hours × \$35.69) + (560 hours × \$20.58) = \$11,917

### Transfer of Records (§1926.1127(n)(6))

During the period of this ICR, the Agency believes that no employer covered by the Standard will cease business operations without a successor employer, or a designated organization, to receive and retain the required records for the prescribed periods; therefore, no such employer will transfer these records to NIOSH during this period. Accordingly, the Agency is assigning no burden hours or cost to this requirement.

- 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**

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<sup>7</sup> The Agency estimated the number of inspections by determining the inspection rate (1.4%) for all facilities under the jurisdiction of the OSH Act (including both Federal OSHA and approved state-plan agencies), and then multiplied the total number of facilities (i.e., construction sites) covered by the Standard (10,000) by this percentage (i.e., 10,000 facilities × 1.4% = 140 inspections).

<sup>8</sup> This figure includes parties acting on an employee's behalf (i.e., their designated representatives, parties with the employee's written consent, and family members).

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.

## 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 \$1,775,457.

### (A) Exposure Monitoring

The RIA found that employers paid \$43 to analyze an exposure-monitoring sample.<sup>9</sup> 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:

$$\text{Cost:} \quad (6,999 \text{ samples} + 500 \text{ samples}) \times \$43 = \$322,457$$

### (B) Medical Surveillance

Based on information from a large occupational medicine practice that performs medical exams on Cd-exposed employees, the cost for the medical exam required by the Standard is currently estimated to be at \$169 per exam.<sup>10</sup> For biological testing, current costs are as follows:  $\beta_2$ -MU (beta-2 microglobulin in

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<sup>9</sup> The previous ICR update estimated that the cost to analyze an exposure-monitoring sample was \$40. The Consumer Price Index (CPI) indicated a 6.3% increase in the price of professional medical services from 2005 to 2007; given the 6.3% increase in the price of professional medical services, it was assumed that the cost to analyze an exposure-monitoring sample increased by 6.3% as well.

<sup>10</sup> The previous ICR update estimated that the cost for a medical examination was \$159 per exam, including \$45 for a medical history and physical, \$84 for a chest x-ray, and \$30 for a pulmonary function test. Given the 6.3% increase in the price of professional medical services discussed in footnote 12, it was assumed that the cost of

urine) - \$59; CdU (cadmium in urine) - \$27; and CdB (cadmium in blood) - \$27.<sup>11</sup> 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  $\beta_2$ -MU (i.e., 7,250 samples for each substance).<sup>12</sup> The yearly capital cost of the medical-surveillance requirements is:

**Cost:**  $(3,750 \text{ medical examinations} \times \$169) + ((7,250 \text{ CdU samples} + 7,250 \text{ CdB samples}) \times \$27) + (7,250 \beta_2\text{-MU samples} \times \$59) = \$1,453,000$

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

#### **COST TO FEDERAL GOVERNMENT**

The Federal government may incur costs from paragraphs (n)(5) and (n)(6) of the Standard. Paragraph (n)(5) specifies that employers must make all required records available to OSHA for inspection; paragraph (n)(6) requires employers to transfer medical-surveillance and exposure-monitoring records to NIOSH when they cease business operations without a successor employer or a designated organization to receive and retain the required records for the prescribed periods. As noted above under “Transfer of Records (§1926.1127(n)(6)),” the Agency believes that no employer will transfer these records to NIOSH during the period covered by this ICR; therefore, it assigns no cost to the Federal government under this provision.

In fulfilling its enforcement responsibilities under paragraph (n)(5), the Agency estimates that a compliance officer (GS-12, step 5), at an hourly wage rate of \$39.70, spends about 10 minutes (.17 hour) during an inspection reviewing the written records required by the Standard.<sup>13</sup> According to footnote seven above, OSHA believes that its compliance officers conduct 140 such inspections annually. The Agency considers other expenses, such as equipment, overhead, and support staff salaries, as normal operating expenses that would occur without the collection of information requirements specified by the Standard. Therefore, the total cost of these paperwork requirements to the federal government is:

**Cost:**  $140 \text{ inspections} \times .17 \text{ hour} \times \$39.70 = \$945$

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

The Agency is requesting an increase of \$118,457, from \$1,657,000 to \$1,775,457, as a result of

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medical examinations increased by 6.3% as well.

<sup>11</sup> The previous ICR update estimated the cost of biological testing as follows:  $\beta_2$ -MU - \$55; CdU - \$25; and CdB - \$25. Given the 6.3% increase in the price of professional medical services discussed in footnote 10, it was assumed that the price of biological testing increased by 6.3% as well.

<sup>12</sup> While 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  $\beta_2$ -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.

<sup>13</sup> This rate represents the average 2009 General Schedule (GS) hourly wage rate for a compliance officer (GS-12, Step 5) in each of the 32 geographic regions as specified by the U.S. Office of Personnel Management.

updating costs for medical surveillance as follows: a medical examination, including a chest x-ray and a pulmonary function test, was increased from \$130 to \$159; biological tests for CdU (cadmium in urine) and CdB (cadmium in blood) increased from \$25 to \$65; and  $\beta_2$ -MU (beta-2 microglobulin in urine) increased from \$55 to \$80.

**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.**

No forms are available for the Agency to display the expiration date.

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

OSHA is not requesting an exception to the certification statement in ROCIS.