

**SUPPORTING STATEMENT FOR
THE INFORMATION COLLECTION REQUIREMENTS
IN THE PROPOSED RESPIRABLE CRYSTALLINE SILICA STANDARDS FOR
GENERAL INDUSTRY, SHIPYARD EMPLOYMENT,
AND MARITIME TERMINALS (29 CFR 1910.1053),
AND CONSTRUCTION (29 CFR 1926.1053)¹
OMB CONTROL NO. 1218-0NEW (June 2013)**

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 “the 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 to this Act as the Secretary . . . may prescribe by regulation as necessary or appropriate for the enforcement of this Act or for developing information regarding the causes and prevention of occupational accidents and illnesses” (29 U.S.C. 657).

¹ ?The purpose of this Supporting Statement is to analyze and describe the burden hours and costs associated with provisions of the Respirable Crystalline Silica Standards that contain collections of information (paperwork) requirements; this Supporting Statement does not provide information or guidance on how to comply with, or how to enforce, these provisions.

Section 6(b)(7) of the Act specifies that “[a]ny standard promulgated under this subsection shall prescribe the use of labels or other appropriate forms of warning as are necessary to insure that employees are apprised of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure.” This provision goes on to state that “[t]he Secretary, in consultation with the Secretary of Health and Human Services, may by rule promulgated pursuant to Section 553 of title 5, United States Code, make appropriate modifications in the foregoing requirements relating to the use of labels or other forms of warning . . . as may be warranted by experience, information, or medical or technological developments acquired subsequent to the promulgation of the relevant standard” (29 U.S.C. 655).

Under the authority granted by the OSH Act, the Agency issued proposed standards addressing respirable crystalline silica exposure in general industry, shipyard employment, maritime terminals, and construction (“the Standards”; 29 CFR 1910.1053 (general industry/maritime²) and 1926.1053 (construction), respectively). The general industry/maritime and construction Standards are similar to each other, but differ in some respects. OSHA believes that certain conditions in the construction sector warrant requirements that are somewhat different than those requirements that apply to the general industry/maritime sectors.

The basis for these proposed Standards is a determination by OSHA that exposure to respirable crystalline silica poses significant risk to an estimated 2.1 million³ workers. OSHA is proposing a permissible exposure limit (PEL) for occupational exposure to respirable crystalline silica of 50 micrograms per cubic meter of air (50 µg/m³), assessed using an 8-hour time-weighted average (referred to hereafter as “TWA”). The Agency also proposed an action level (AL) of 25 micrograms per cubic meter of air (25 µg/m³), measured as a TWA. Exposures below the action level exempt employers from some of the regulatory burdens of the Standards, such as employee exposure monitoring; exposures below the PEL exempt employers from other regulatory burdens of the Standards, such as medical surveillance. Items 2 and 12 below list and describe the specific information collection requirements of the Standards.

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.

²This standard applies to general industry, shipyard employment, and marine terminals. 29 CFR 1915, Occupational Safety and Health Standards for Shipyard Employment, and 29 CFR 1917, Marine Terminals, will incorporate 29 CFR 1910.1053 by reference. This Supporting Statement will use the term “maritime” to refer jointly to employers and workers involved in shipyard employment and maritime terminals.

³Preliminary Economic Analysis (PEA), Chapter III: “Profile of Affected Industries,” p. III-21.

A. Exposure Assessment (§§ 1910.1053(d) and 1926.1053(d))

1. Exposure Assessment, General

§ 1910.1053(d)(1) -- Exposure Assessment, General (General Industry/Maritime)

(i) Each employer covered by this section shall assess the exposure of employees who are or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level.

(iii) The employer shall determine 8-hour TWA exposures on the basis of one or more air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where several employees perform the same job tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

§ 1926.1053(d)(1) -- Exposure Assessment, General (Construction)

(i) Except as provided for in paragraph (d)(8) of this section, each employer covered by this section shall assess the exposure of employees who are or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level.

(iii) The employer shall determine 8-hour TWA exposures on the basis of one or more air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where several employees perform the same job tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

Purpose: The purposes of requiring an assessment of worker exposures to respirable crystalline silica include: determination of the extent and degree of exposure at the worksite, identification and prevention of worker overexposure, identification of the sources of exposure, collection of exposure data so that the employer can select the proper control methods to use, and evaluation of the effectiveness of those selected methods. Assessment enables employers to meet their legal obligation to ensure that their workers are not exposed in excess of the permissible exposure level, and to ensure workers have access to accurate information about their exposure levels, as required by Section 8(c)(3) of the Act. 29 U.S.C. 657(c)(3). In addition, the availability of exposure data informs physicians and other licensed healthcare professionals (PLHCPs) performing medical examinations of the extent of occupational exposures.

2. §§ 1910.1053 and 1926.1053(d)(2) -- Initial Exposure Assessment

(i) Except as provided for in paragraph (d)(2)(ii), each employer shall perform initial monitoring of employees who are, or may reasonably be expected to be, exposed to airborne concentrations of respirable crystalline silica at or above the action level.

(ii) The employer may rely on existing data to satisfy this initial monitoring requirement where the employer:

(A) Has monitored employee exposures after [INSERT DATE 12 MONTHS PRIOR TO EFFECTIVE DATE] under conditions that closely resemble those currently prevailing, provided that such monitoring satisfies the requirements of paragraphs (d)(5)(i) with respect to analytical methods employed; or

(B) Has objective data that demonstrate that respirable crystalline silica is not capable of being released in airborne concentrations at or above the action level under any expected conditions of processing, use, or handling.

Purpose: Further obligations under the Standards are based on the results of this initial assessment. These may include obligations for periodic monitoring, establishment of regulated areas, implementation of control measures, and provision of medical surveillance. The Agency believes the use of data no more than 12 months old is appropriate, since samples taken more than 12 months before the effective date may not adequately represent current workplace conditions.

3. §§ 1910.1053 and 1926.1053(d)(3) -- Periodic Exposure Assessments. If initial monitoring indicates that employee exposures are below the action level, the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring. If initial monitoring indicates that employee exposures are at or above the action level, the employer shall assess employee exposures to respirable crystalline silica either under the fixed schedule prescribed in paragraph (d)(3)(i) or in accordance with the performance-based requirement prescribed in paragraph (d)(3)(ii).

(i) Fixed schedule option.

(A) Where initial or subsequent exposure monitoring reveals that employee exposures are at or above the action level but at or below the PEL, the employer shall repeat such monitoring at least every six months.

(B) Where initial or subsequent exposure monitoring reveals that employee exposures are above the PEL, the employer shall repeat such monitoring at least every three months.

(C) The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level, at which time the employer may discontinue monitoring for that employee, except as otherwise provided in paragraph (d)(4) of this section.

(ii) Performance option. The employer shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

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

Because of the fluctuation in exposures, OSHA believes that when initial monitoring results equal or exceed the action level, but are at or below the PEL, employers should continue to monitor workers to ensure that exposures remain at or below the PEL. Likewise, when initial monitoring results exceed the PEL, periodic monitoring allows the employer to maintain an accurate profile of worker exposures. If the employer installs or upgrades controls, periodic monitoring will demonstrate whether or not controls are working properly. Selection of appropriate respiratory protection also depends on adequate knowledge of worker exposures.

OSHA believes that the proposed frequencies of six months for subsequent periodic monitoring for exposures at or above the action level, but at or below the PEL, and three months for exposures above the PEL, provide intervals that are both practical for employers and protective for workers.

The performance option of the Standards would allow employers flexibility in performing periodic exposure assessments, including the methods used to assess worker exposures to respirable crystalline silica, while ensuring that the methods used are accurate in characterizing worker exposures.

4. §§ 1910.1053 and 1926.1053(d)(4) -- Additional Exposure Assessments. The employer shall conduct additional exposure assessments as required under paragraph (d)(3) of this section whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level.

Purpose: The additional assessments required under this subsection are necessary to ensure that the exposure assessment accurately represents existing exposure conditions. The exposure information gained from such assessments will enable the employer to take appropriate action to protect exposed workers, such as instituting additional engineering controls or providing appropriate respiratory protection. On the other hand, additional monitoring is not required simply because a change occurs, if the change is not reasonably expected to result in new or additional exposures to respirable crystalline silica.

5. Employee Notification of Assessment Results

§ 1910.1053(d)(6) -- Employee Notification of Assessment Results (General Industry/Maritime)

(i) Within 15 working days after completing an exposure assessment in accordance with paragraph (d) of this section, the employer shall individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees.

(ii) Whenever the exposure assessment indicates that employee exposure is above the PEL, the employer shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.

Purpose: Notifying workers of their exposures allows them to know if the employer is required to make medical surveillance available to them, according to paragraph (h)(1)(i), and can permit and encourage them to be more proactive in working safely to control their own exposures through better work practices and more active participation in safety programs. The time allowed for notification is consistent with the harmonized notification times established for a number of health standards applicable to general industry and construction in Phase II of OSHA's Standards Improvement Project. 70 FR 1112; January 5, 2005.

§1926.1053(d)(6) -- Employee Notification of Assessment Results (Construction)

(i) Within 5 working days after completing an exposure assessment in accordance with paragraph (d) of this section, the employer shall individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees.

(ii) Whenever the exposure assessment indicates that employee exposure is above the PEL, the employer shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.

Purpose: See purpose statement above for §1910.1053(d)(6). The shorter time period for notification provided in construction addresses the short duration of operations and employment that often occur in this industry sector.

6. § 1926.1053(d)(8)(ii) -- Specific Operations (Construction)

* * *

(ii) For the purposes of complying with all other requirements of this section, the employer must presume that each employee performing an operation listed in Table 1 that requires a respirator is exposed above the PEL, unless the employer can demonstrate otherwise in accordance with the exposure assessment requirements of paragraph (d) of this section.

Purpose: OSHA developed Table 1 of the construction Standard (“the Table”) from recommendations made by small-entity representatives through the Small Business Regulatory Flexibility Act (SBREFA) process. The SBREFA panel asked OSHA to develop a provision that detailed what specific controls to use for each construction operation covered by this Standard to achieve compliance with paragraph (f)(1), “Methods of compliance.” The Table provides a list of 13 construction operations that expose workers to crystalline silica, as well as engineering and work practice controls that reduce those exposures.

Under paragraph (d)(8), if an employer performing operations listed in Table 1 chooses to follow the Table, then the employer need not conduct initial air-monitoring to determine potential exposures. However, under paragraph (d)(8)(ii), employers performing operations listed in Table 1 have the option to comply with the exposure assessment requirements of paragraph (d) instead of presuming that employees are exposed above the PEL. (See the purpose statement above for paragraph 1, “Exposure Assessment, General.”)

OSHA anticipates that many employers, aware that their operations currently expose their workers to silica levels above the PEL, will choose to comply with Table 1 and avoid the costs of conducting exposure assessments. However, for purposes of estimating burden and costs, OSHA took a more conservative approach, and assumed that all employers in at-risk construction activities will conduct initial exposure assessments and additional exposure monitoring as needed. For exposures above the PEL, the Agency assumes that all employers in construction would choose to comply with Table 1 and, therefore, would not have to conduct periodic exposure monitoring.

OSHA is not taking additional burden hours or costs for the information collection requirement of the Specific Operations provision, (d)(8)(ii), under Items 12 and 13 of this Supporting Statement because this provision is accounted for as part of initial, periodic, and additional monitoring burden and costs in section A of Items 12 and 13.

B. Regulated Areas and Access Control (§§ 1910.1053(e) and 1926.1053(e))

1. Regulated Areas

§§ 1910.1053(e)(2) -- Regulated Areas Option (General Industry/Maritime)

(i) Establishment. The employer shall establish a regulated area wherever an employee’s exposure to airborne concentrations of respirable crystalline silica is, or can reasonably be expected to be, in excess of the PEL.

(ii) Demarcation. The employer shall demarcate regulated areas from the rest of the workplace in any manner that adequately establishes and alerts employees to the boundaries of the area and minimizes the number of employees exposed to respirable crystalline silica within the regulated area.

§ 1926.1053(e)(2) -- Regulated Areas Option (Construction)

(i) Establishment. The employer shall establish a regulated area wherever an employee's exposure to airborne concentrations of respirable crystalline silica is, or can reasonably be expected to be, in excess of the PEL.

(ii) Demarcation. The employer shall demarcate regulated areas from the rest of the workplace in any manner that adequately establishes and alerts employees to the boundaries of the area and minimizes the number of employees exposed to respirable crystalline silica within the regulated area.

Purpose: The purpose of a regulated area is to ensure that the employer makes workers aware of the presence of respirable crystalline silica at levels above the PEL, and to limit exposure to as few workers as possible. Establishing a regulated area is an effective means of minimizing exposure to workers not directly involved in operations that generate respirable crystalline silica, and limiting the risk of exposure to substances known to cause adverse health effects.

OSHA is not taking burden hours or costs for the regulated-areas provisions under Items 12 and 13 of this Supporting Statement because they are performance-oriented and do not require employers to post warning signs. In the Standards, OSHA did not specify how employers are to demarcate regulated areas. Signs, barricades, lines, or textured flooring may each be effective means of demarcating the boundaries of regulated areas. Permitting employers to choose how best to identify and limit access to regulated areas is consistent with OSHA's belief that employers are in the best position to make such determinations, based on their knowledge of the specific conditions of their workplaces. Whatever methods they choose to establish a regulated area, the demarcation must effectively warn employees not to enter the area unless they are authorized to do so, and then only if they are using the proper personal protective equipment.

2. §§1910.1053 and 1926.1053(e)(3) -- Written Access Control Plan Option

(i) The employer shall establish and implement a written access control plan.

(ii) The written access control plan shall contain at least the following elements:

(A) Provisions for a competent person to identify the presence and location of any areas where respirable crystalline silica exposures are, or can reasonably be expected to be, in excess of the PEL;

(B) Procedures for notifying employees of the presence and location of areas identified pursuant to paragraph (e)(3)(ii)(A) of this section, and for demarcating such areas from the rest of the workplace where appropriate;

(C) For multi-employer workplaces, the methods the employer covered by this section will use to inform other employer(s) of the presence and location of areas where respirable crystalline silica exposures may exceed the PEL, and any precautionary measures that need to be taken to protect employees;

(D) Provisions for limiting access to areas where respirable crystalline silica exposures may exceed the PEL to effectively minimize the number of employees exposed and the level of employee exposure;

(E) Procedures for providing each employee and their designated representative entering an area where respirable crystalline silica exposures may exceed the PEL with an appropriate respirator in accordance with paragraph (g) of this section, and requiring each employee and their designated representative to use the respirator while in the area; and

(F) Where there is the potential for employees' work clothing to become grossly contaminated with finely divided material containing crystalline silica:

(1) Provisions for the employer to provide either appropriate protective clothing such as coveralls or similar full-bodied clothing, or any other means to remove excessive silica dust from contaminated clothing that minimizes employee exposure to respirable crystalline silica; and

(2) Provisions for the removal or cleaning of such clothing.

(iii) The employer shall review and evaluate the effectiveness of the written access control plan at least annually and update it as necessary.

(iv) The employer shall make the written access control plan available for examination and copying, upon request, to employees, their designated representatives, the Assistant Secretary and the Director.

Purpose: The provision for establishing written access control plans in lieu of regulated areas would provide employers with flexibility to adapt to the particular circumstances of worksites where the source of exposure could be constantly moving, while maintaining equivalent protection for workers.

C. Methods of Compliance (§1910.1053(f))

1. §1910.1053(f)(2) -- Abrasive Blasting. In addition to the requirements of paragraph (f)(1) of this section, the employer shall comply with the requirements of ... 29 CFR 1915 Subpart I (Personal Protective Equipment), as applicable, where abrasive blasting operations are conducted using crystalline silica-containing blasting agents, or where abrasive blasting operations are conducted on substrates that contain crystalline silica.

Purpose: The Agency concluded that there is a significant risk of serious injury to shipyard workers working with blasting agents or substrates containing crystalline silica; employers can mitigate these hazards by using suitable personal protective equipment. Compliance with 29 CFR 1915 Subpart I is necessary to substantially reduce this risk. This provision serves as a reminder to employers covered by 29 CFR 1915 that they must comply with its requirements. When employers conduct abrasive-blasting operations in maritime industries, paragraph (f)(2) in the general industry/maritime Standard requires the employer to comply with the requirements of 29 CFR 1915, Subpart I, Personal Protective Equipment for Shipyard Employment, as

applicable. Subpart I requires shipyard employers to provide, and ensure that each affected worker uses, the appropriate personal protective equipment (PPE) whenever they expose workers to hazards that require the use of PPE.

Subpart I contains several information collection requirements. Under Subpart I, when conducting hazard assessments, the employer must: (1) select the type of PPE that will protect the affected worker from the hazards identified in the occupational hazard assessment; (2) communicate selection decisions to affected workers; (3) select PPE that properly fits each affected worker; and (4) verify that they performed the required occupational hazard assessment. The verification must contain the following information: occupation or trade assessed, the date(s) of the hazard assessment, and the name of the person performing the hazard assessment.

OSHA is not taking additional burden hours or costs related to the requirement in 29 CFR 1910.1053(f) for compliance with Subpart I by shipyard employers under Items 12 and 13 of this Supporting Statement because the Agency accounted for the associated information collection requirements in the Supporting Statement for the Standard on Personal Protective Equipment (PPE) for Shipyard Employment, 29 CFR Part 1915, Subpart I, OMB Control Number 1218-0215.

D. Respiratory Protection (§§1910.1053(g) and 1926.1053(g))

1. §§1910.1053 and 1926.1053(g)(2) -- Respiratory Protection Program. Where respirator use is required by this section, the employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134.

Purpose: The respiratory protection program would ensure that employees use respirators properly in the workplace, and that respirators are effective in protecting workers. These requirements would 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. This provision also serves as a reminder to employers covered by the respirable crystalline silica rule that they must comply with the Respiratory Protection Standard when they provide respirators to workers.

The Agency accounts for the collection of information requirements of the Respiratory Protection Standard as it relates to respirable crystalline silica exposure in the Respiratory Protection Standard ICR, OMB Control Number 1218-0099, unless otherwise accounted for in Items 12 and 13 in this Supporting Statement. In addition, OSHA is not taking additional burden hours or costs under Items 12 and 13 of this Supporting Statement for worker medical evaluations related to the administration of the medical questionnaire for respirator use and follow-up medical examination for respirator use, as required by the Respiratory Protection Standard, because these information collection requirements are accounted for in section E of Item 12 of this Supporting Statement, “Medical Surveillance.” Furthermore, the collection of information requirements of the Respiratory Protection Standard for storing and marking emergency-use respirators, certification of inspection records for emergency-use respirators, and

maintenance of tags on compressors displaying sorbent-bed and filter change information are not applicable to the types of respirators that employers would use to comply with the proposed Standards.⁴

E. Medical Surveillance (§§ 1910.1053(h) and 1926.1053(h))

1. §§1910.1053 and 1926.1053(h)(2) -- Initial Examination. The employer shall make available an initial (baseline) medical examination within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this section within the last three years. The examination shall consist of:

(i) A medical and work history, with emphasis on: past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history;

(ii) A physical examination with special emphasis on the respiratory system;

(iii) A chest X-ray (posterior/anterior view; no less than 14 x 17 inches and no more than 16 x 17 inches at full inspiration), interpreted and classified according to the International Labour Organization (ILO) International Classification of Radiographs of Pneumoconioses by a NIOSH-certified “B” reader, or an equivalent diagnostic study;

(iv) A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume at one second (FEV₁) and FEV₁/FVC ratio, administered by a spirometry technician with current certification from a NIOSH-approved spirometry course;

(v) Testing for latent tuberculosis infection; and

(vi) Any other tests deemed appropriate by the PLHCP.

Purpose: The initial medical examination not only establishes a medical baseline for each worker, but serves to identify workers who have respirable crystalline silica-related medical disorders or other health problems that additional respirable crystalline silica exposure may exacerbate. The proposed requirement that employers offer employees a medical examination within 30 days after initial assignment would help employers determine if an employee will be able to work in the job involving respirable crystalline silica exposure without adverse effects.

The general purposes of medical surveillance for respirable crystalline silica include: to determine, when reasonably possible, if the employer can expose an employee to respirable crystalline silica in his or her workplace without the employee experiencing adverse health effects; to identify respirable crystalline silica-related adverse health effects for the purpose of taking appropriate intervention measures; and to determine the worker’s fitness to use personal protective equipment, such as respirators.

⁴The PEA bases the costs for respirators on half-mask or full-faced, non-powered, air-purifying respirators. (See: Tables V-7 and V-34.)

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

2. §§ 1910.1053 and 1926.1053(h)(3) -- Periodic Examinations

The employer shall make available medical examinations that include the procedures described in paragraph (h)(2) of this section (except paragraph (h)(2)(v)) at least every three years, or more frequently if recommended by the PLHCP.

Purpose: The main goal of periodic medical surveillance for workers is to detect adverse health effects at an early and potentially reversible stage. Based on its experience, OSHA believes that triennial surveillance would strike a reasonable balance between the need to diagnose health effects at an early stage and the limited number of cases likely to be identified through surveillance.

3. §§ 1910.1053 and 1926.1053(h)(4) -- Information Provided to the PLHCP. The employer shall ensure that the examining PLHCP has a copy of this standard, and shall provide the following information:

- (i) A description of the affected employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica;
- (ii) The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica;
- (iii) A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used that equipment; and
- (iv) Information from records of employment-related medical examinations previously provided to the affected employee and currently within the control of the employer.

Purpose: Making this information available to the PLHCP will aid in the evaluation of the worker's health in relation to assigned duties and fitness to use personal protective equipment, when necessary. The results of exposure monitoring are part of the information that the employer would supply to the PLHCP responsible for medical surveillance. These results contribute valuable information to assist the PLHCP in determining if a worker is likely to be at risk of harmful effects from respirable crystalline silica exposure. A well-documented exposure history also assists the PLHCP in determining if a condition (e.g., compromised pulmonary function) may involve exposure to respirable crystalline silica.

4. §§ 1910.1053 and 1926.1053(h)(5) -- PLHCP's Written Medical Opinion

(i) The employer shall obtain a written medical opinion from the PLHCP within 30 days of each medical examination performed on each employee. The written opinion shall contain:

(A) A description of the employee's health condition as it relates to exposure to respirable crystalline silica, including the PLHCP'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 exposure to respirable crystalline silica;

(B) Any recommended limitations upon the employee's exposure to respirable crystalline silica or upon the use of personal protective equipment such as respirators;

(C) A statement that the employee should be examined by an American Board Certified Specialist in Pulmonary Disease ("pulmonary specialist") pursuant to paragraph (h)(6) of this section if the chest X-ray provided in accordance with this section is classified as 1/0 or higher by the "B" reader, or if referral to a pulmonary specialist is otherwise deemed appropriate by the PLHCP; and

(D) A statement that the PLHCP has explained to the employee the results of the medical examination, including findings of any medical conditions related to respirable crystalline silica exposure that require further evaluation or treatment, and any recommendations related to use of protective clothing or equipment.

(ii) The employer shall ensure that the PLHCP does not reveal to the employer specific findings or diagnoses unrelated to occupational exposure to respirable crystalline silica.

(iii) The employer shall provide a copy of the PLHCP's written medical opinion to the examined employee within two weeks after receiving it.

Purpose: The purpose of requiring the PLHCP to supply a written medical opinion to the employer is to provide the employer with a medical basis to aid in making a determination regarding the placement of a worker, and to assess the worker's ability to use protective clothing and equipment. The employer must obtain the written opinion within 30 days of the examination; OSHA believes this requirement will provide the PLHCP sufficient time to receive and consider the results of any tests included in the examination, and allow the employer to take any necessary protective measures in a timely manner. The proposed requirement that the opinion be in written form would ensure that employers and workers have the benefit of this information. In addition, the proposed standard requires the employer to provide a copy of the PLHCP's written opinion to the worker within two weeks after the employer receives it, to ensure that the worker has been informed of the results of the examination in a timely manner.

These proposed requirements are consistent with the overall goals of medical surveillance: to determine if an employer can expose a worker to respirable crystalline silica present in his or her workplace without the worker experiencing adverse health effects, to identify respirable crystalline silica-related adverse health effects so that the employer can take appropriate

intervention measures, and to determine the worker's fitness to use personal protective equipment such as respirators.

The PLHCP may not include findings unrelated to crystalline silica exposure in the written opinion provided to the employer, or otherwise reveal such findings to the employer. OSHA proposed this provision to assure confidentiality of medical information, and to reassure workers participating in medical surveillance that they will not be penalized or embarrassed as a result of the employer obtaining information about them not directly pertinent to respirable crystalline silica exposure.

5. §§ 1910.1053 and 1926.1053(h)(6) -- Additional Examinations

(i) If the PLHCP's written medical opinion indicates that an employee should be examined by a pulmonary specialist, the employer shall make available a medical examination by a pulmonary specialist within 30 days after receiving the PLHCP's written medical opinion.

Purpose: The proposed requirement for examination by a pulmonary specialist would ensure that a professional with the expertise in respiratory disease evaluates workers with abnormal findings; such a professional can provide not only expert medical judgment, but also counseling regarding work practices and personal habits that could affect these workers' respiratory health.

§§ 1910.1053 and 1926.1053(h)(6)(ii). The employer shall ensure that the examining pulmonary specialist is provided with all of the information that the employer is obligated to provide to the PLHCP in accordance with paragraph (h)(4) of this section.

Purpose: The employer must provide the pulmonary specialist with the same information that the employer provides to the original PLHCP. The reasons why the pulmonary specialist should receive this information are the same as those for providing the information to the PLHCP. (See the purpose statement above for paragraph 3, "Information Provided to the PLHCP.")

§§ 1910.1053 and 1926.1053(h)(6)(iii). The employer shall obtain a written medical opinion from the pulmonary specialist that meets the requirements of paragraph (h)(5) (except paragraph (h)(5)(i)(C)) of this section.

Purpose: Paragraph (h)(6)(iii) requires the employer to obtain a written medical opinion from the pulmonary specialist comparable to the written opinion obtained from the original PLHCP. The reasons why the pulmonary specialist should provide this information to the employer are the same as those for the PLHCP and are addressed above, in paragraph 4 of this section, "PLHCP's Written Medical Opinion."

F. Communication of Respirable Crystalline Silica Hazards to Employees (§§ 1910.1053 and 1926.1053(i))

1. §§ 1910.1053 and 1926.1053(i)(1) -- Hazard Communication. The employer shall include respirable crystalline silica in the program established to comply with the Hazard Communication Standard (HCS) (29 CFR 1910.1200). The employer shall ensure that each

employee has access to labels on containers of crystalline silica and safety data sheets. The employer shall ensure that at least the following hazards are addressed: Cancer, lung effects, immune system effects, and kidney effects.

Purpose: This requirement is essential to inform employees of the health hazards resulting from hazardous chemical exposure and to provide them with the understanding necessary to minimize these hazards. Accordingly, paragraph (i)(1) of the Standards requires compliance with the HCS requirements, and lists cancer, lung effects, immune system effects, and kidney effects as hazards that need to be addressed in the employer's hazard communication program. These are the health effects that OSHA preliminarily determined to be associated with respirable crystalline silica exposure.

As stated in Section I. of the NPRM, "Issues," compliance with the HCS would mean that "there would be a requirement for a warning label for substances that contain more than 0.1 percent crystalline silica" and "the proposed rule does not alter the requirements for substances to have warning labels, specify wording for labels, or otherwise modify the provisions of the HCS." The Agency accounts for the burden hours and costs associated with compliance with the HCS under the Information Collection Request (ICR) for the HCS, OMB Control No. 1218-0072.

2. §§ 1910.1053 and 1926.1053(i)(2) -- Employee Information and Training

(i) The employer shall ensure that each affected employee can demonstrate knowledge of at least the following:

(A) Specific operations in the workplace that could result in exposure to respirable crystalline silica, especially operations where exposure may exceed the PEL;

(B) Specific procedures the employer has implemented to protect employees from exposure to respirable crystalline silica, including appropriate work practices and use of personal protective equipment such as respirators and protective clothing;

(C) The contents of this section; and

(D) The purpose and a description of the medical surveillance program required by paragraph (h) of this section.

Purpose: OSHA believes that it is necessary to inform workers of the hazards of respirable crystalline silica exposure, along with associated protective measures, so that workers understand how they can minimize potential health hazards. As part of an overall hazard-communication program, training serves to explain and reinforce the information presented on labels and in safety data sheets. These written forms of communication will be effective and relevant only when workers understand the information presented, and are aware of the actions the employer must take to avoid or minimize exposures, thereby reducing the possibility of experiencing adverse health effects.

This knowledge/training requirement is not considered to be a collection of information under the PRA-95; therefore, no burden hours or costs are assessed for this activity under Items 12 or 13 of this Supporting Statement

3. §§ 1910.1053 and 1926.1053(i)(2)(ii) -- Employee Information and Training

(ii) The employer shall make a copy of this section readily available without cost to each affected employee.

Purpose: OSHA believes that it is important for workers to be familiar with, and have access to, the Standards and the employer's obligations to comply with them to ensure that workers understand their rights under the Standards and their employer's obligations to comply with the Standards.

OSHA is not taking burden hours or cost under Items 12 or 13 of this Supporting Statement for the requirement to make a copy of the Standards available to affected workers. OSHA provides the employer with the language of the Standards for disclosure. Therefore, in accordance with Section 1320.3(c)(2) of the Paperwork Reduction Act of 1995 (PRA-95), this requirement does not fall within the definition of a collection of information.

G. Recordkeeping (§§ 1910.1053(j) and 1926.1053(j))

OSHA proposed the recordkeeping requirements in accordance with Section 8(c) of the OSH Act (29 U.S.C. 657(c)), which authorizes OSHA to require employers to keep and make available records as necessary or appropriate for the enforcement of the Act, or for developing information regarding the causes and prevention of occupational accidents and illnesses.

Employers must maintain and provide access to air-monitoring data, objective data, and medical-surveillance records in accordance with OSHA's standard addressing access to worker-exposure and medical records (29 CFR 1910.1020). That standard, specifically 29 CFR 1910.1020(d), requires employers to ensure the preservation and retention of employee exposure and medical records.

1. §§ 1910.1053 and 1926.1053(j)(1)(i), (j)(1)(ii) – Air-Monitoring Data

(i) The employer shall maintain an accurate record of all exposure measurement results used or relied on to characterize employee exposure to respirable crystalline silica, as prescribed in paragraph (d) of this section.

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

(A) The date of measurement for each sample taken;

(B) The operation monitored;

(C) Sampling and analytical methods used;

(D) Number, duration, and results of samples taken;

(E) Identity of the laboratory that performed the analysis;

(F) Type of personal protective equipment, such as respirators, worn by the employees monitored; and

(G) Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.

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

The requirements of the provision generally are consistent with those requirements found in other OSHA standards, such as Methylene Chloride (29 CFR 1910.1052) and Chromium (VI) (29 CFR 1910.1026). OSHA proposed an additional requirement in this rulemaking -- recording the identity of the laboratory that performed the analysis of exposure measurements -- because of the importance of ensuring that laboratories performing analyses of respirable crystalline silica samples conform with the requirements specified in paragraph (d)(5) of the proposed rule.

§§ 1910.1053 and 1926.1053 (j)(1)(iii). The employer shall ensure that exposure records are maintained and made available in accordance with 29 CFR 1910.1020.

Purpose: Employers must maintain exposure records, and make them available, in accordance with 29 CFR 1910.1020. OSHA considers air-monitoring data to be a worker-exposure record that employers must maintain for at least 30 years in accordance with 29 CFR 1910.1020(d)(1)(ii).

The maintenance and access provisions incorporated from 29 CFR 1910.1020 ensure that records are available to workers so that they may examine the employer's exposure assessments and assure themselves that they are receiving adequate protection. Moreover, compliance with the requirement to maintain records of exposure data will enable the employer to show, at least for the duration of the retention-of-records period, that the exposure assessment was accurate and conducted in an appropriate manner. A lengthy record-retention period is necessary because of the long latency period commonly associated with silica-related diseases. Furthermore,

determining causality of disease in workers is aided by, and in some cases requires, examining present and past exposure data, as well as the results of present and past medical examinations.

The costs and burden hours associated with compliance with 29 CFR 1910.1020 are taken in the Access to Employee Exposure and Medical Records ICR, OMB Number 1218-0065.

2. §§ 1910.1053 and 1926.1053(j)(2)(i) and (j)(2)(ii) -- Objective Data

(i) The employer shall maintain an accurate record of all objective data relied upon to comply with the requirements of this section.

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

(A) The crystalline silica-containing material in question;

(B) The source of the objective data;

(C) The testing protocol and results of testing;

(D) A description of the process, operation, or activity and how the data support the assessment; and

(E) Other data relevant to the process, operation, activity, material, or employee exposures.

Purpose: Employers can use objective data for an exemption from the exposure assessment provisions of the proposal, as well as for selecting respirators. Therefore, it is critical that the objective data used for these purposes characterize worker exposures to respirable crystalline silica as accurately as air monitoring. Employers also must carefully document their use of objective data, and the records must demonstrate a reasonable basis for the conclusions drawn from the objective data.

§§ 1910.1053 and 1926.1053(j)(2)(iii) -- The employer shall ensure that objective data are maintained and made available in accordance with 29 CFR 1910.1020.

Purpose: OSHA considers objective data to be a worker-exposure record that employers must maintain for at least 30 years in accordance with 29 CFR 1910.1020(d)(1)(ii). (See the purpose statement above for paragraph (j)(1)(iii) in this section of this Supporting Statement.)

The Agency's Preliminary Economic Analysis does not include costs for objective data; therefore, to be consistent no costs are assessed under Item 12 or 13 of this Supporting Statement for objective data records.

3. §§ 1910.1053 and 1926.1053(j)(3)(i) and (j)(3)(ii) -- Medical Surveillance

(i) The employer shall establish and maintain an accurate record for each employee covered by medical surveillance under paragraph (h) of this section.

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

(A) Name and social security number;

(B) A copy of the PLHCP's and pulmonary specialist's written opinions; and

(C) A copy of the information provided to the PLHCPs and pulmonary specialists as required by paragraph (h)(4) of this section.

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

§§ 1910.1053 and 1926.1053(j)(3)(iii). The employer shall ensure that medical records are maintained and made available in accordance with 29 CFR 1910.1020.

Purpose: Employers must maintain medical records for at least the duration of employment plus 30 years, in accordance with 29 CFR 1910.1020(d)(1)(i). (See purpose statement above for paragraph (j)(1)(iii) in this section of this Supporting Statement.)

The costs and burden hours associated with compliance with 29 CFR 1910.1020 are taken in the Access to Employee Exposure and Medical Records ICR, OMB Number 1218-0065.

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

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

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

The information collection requirements of the Standards are specific to each employer and worker involved, and no other source or agency duplicates these requirements or can make the required information available to the Agency (i.e., the required information is available only from employers).

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

As part of the 2003 Small Business Regulatory Enforcement Fairness Act (SBREFA) panel process, OSHA carefully considered comments submitted to the docket regarding the preliminary cost assessment presented in the Preliminary Economic Analysis (“PEA”).

OSHA developed Table 1 of the proposed construction Standard (29 CFR 1926.1053) from recommendations made by small-entity representatives through the SBREFA process. The SBREFA panel asked OSHA to develop a provision that detailed what specific controls to use for each construction operation covered by the Standard to achieve compliance with paragraph (f), “Methods of compliance.” Table 1 provides a list of 13 construction operations that expose workers to crystalline silica, as well as engineering and work-practice controls that reduce those exposures. Under paragraph (d)(8), if an employer chooses to follow Table 1, then the employer is not required by the Standard to conduct initial exposure assessment to determine potential worker exposures.

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

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

Under paragraph (d)(6) of the Standards, employers must inform workers, in writing or by posting, of the exposure-assessment results no later than 5 working days (construction) or 15 working days (general industry/maritime) after obtaining the results. If these results indicate that a worker's exposures are above the PEL, the notification must state what corrective actions the employer is taking to reduce the worker's exposure to or below the PEL. Additionally, paragraph (h)(5)(iii) of the Standards requires employers to provide workers with a copy of the PLHCP's written opinion regarding their medical examination within two weeks after receipt. Lastly, paragraphs (j)(1)(iii) and (j)(2)(iii) require employers to maintain records for 30 years in accordance with 29 CFR 1910.1020. Item 2 of this Supporting Statement provides the rationale for these requirements.

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

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

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

In accordance with 5 CFR 1320.11, OSHA is submitting a proposed Information Collection Request (ICR) to the Office of Management and Budget (OMB) for the information collection

requirements associated with the proposed rules on respirable crystalline silica, 29 CFR 1910.1053 and 1926.1053. Copies of the proposed preamble and rules are attached to this Supporting Statement. As noted in the Section IX. of the preamble, “OMB Review Under the Paperwork Reduction Act of 1995,” members of the public who wish to provide comments on this ICR must submit written comments to the Office of Information and Regulatory Affairs, Attn: OMB Desk Officer for the Department of Labor, OSHA (RIN–1218 –AB70), Office of Management and Budget, Room 10235, Washington, DC 20503, Telephone: 202-395-6929/Fax: 202-395-6881 (these are not toll-free numbers), e-mail: OIRA_submission@omb.eop.gov. OSHA encourages commenters also to submit their comments on these paperwork requirements to the rulemaking docket, OSHA Docket Office (Docket Number OSHA-2010-0034), Room N-2625, 200 Constitution Avenue, NW., Washington, DC 20210, along with their comments on other parts of the proposed rule. Commenters also may submit their comments to OSHA at <http://www.regulations.gov>, the Federal eRulemaking portal. Comments submitted in response to the notice are public records; therefore, OSHA cautions commenters about submitting personal information such as Social Security numbers and date of birth. These comments also will become part of the rulemaking record, and will be available for public inspection and copying in the OSHA Docket Office and at <http://www.regulations.gov>.

As part of the SBREFA panel process, OSHA carefully considered comments submitted to the docket regarding the preliminary cost assessment presented in the Preliminary Economic Analysis (“PEA”).

During the SBREFA panel process, OSHA received comments that the Agency failed to estimate costs specific to small entities, and underestimated certain programmatic costs, particularly for exposure monitoring and medical surveillance. In response, OSHA carefully reviewed its cost estimates and evaluated the alternative estimates and methodologies suggested in the comments. OSHA updated all unit costs to reflect the most recent cost data available, and inflated all costs to 2009 dollars, but generally determined that it based its control-cost estimates on sound methods and reliable data sources. OSHA also developed cost estimates in the PEA as a function of the size of the establishment for exposure monitoring, medical surveillance, and training. In each case, OSHA’s cost estimates now reflect the fact that smaller entities will tend to experience larger unit costs. The Agency now is soliciting further comments on these costs, which it described in detail in the PEA.

In addition, OSHA developed Table 1 of the proposed construction Standard (29 CFR 1926.1053) from recommendations made by small-entity representatives through the SBREFA process. The SBREFA panel asked OSHA to develop a provision that detailed what specific controls to use for each construction operation covered by the Standard to achieve compliance with paragraph (f), “Methods of compliance.” Table 1 provides a list of 13 construction operations that expose workers to crystalline silica, as well as engineering and work-practice controls that reduce those exposures. Under paragraph (d)(8), if an employer chooses to follow Table 1, then the employer is not required by the Standard to conduct initial exposure assessment to determine potential worker exposures.

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 Standards 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 Standards 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.**
- **Provide estimates of annualized costs to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories.**

OSHA based these determinations on its Preliminary Economic Analysis (“PEA”) including the “Rulemaking Support for OSHA’s Preliminary Economic Analysis for Proposed Respirable Crystalline Silica Standard, Excel Spreadsheets of Economic Costs and Impacts” and Appendix A, “Hydraulic Fracturing” reports, prepared by the Eastern Research Group (ERG), which are available in the rulemaking docket.⁵ In this analysis, consistent with the PEA and Appendix A,

⁵The rulemaking docket will be available for public inspection and copying in the OSHA Docket Office and at <http://www.regulations.gov> (Docket Number: OSHA-2010-0034).

hydraulic fracturing industries are costed separately from general and maritime industries although all of these industries are covered under proposed 29 CFR 1910.1053. Tables 1-26, referenced in this Supporting Statement, may be downloaded from www.reginfo.gov. These tables list the detailed data from the PEA and spreadsheets used to make these determinations. Table A, attached to this Supporting Statement, provides a summary of the determinations made by the Agency for the burden hours, burden-hour cost, and capital (operation and maintenance) costs under Items 12 and 13 of this Supporting Statement.

Wage Rates

The Agency obtained the wage rates, which are consistent with the wage rates used in the PEA, from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) publication, “National Occupational Employment and Wage Estimates, 2008.”⁶ The Agency used the average wage rates in production occupations and construction and extraction occupations for the occupational categories affected by the Standards, with the rates inflated to 2009 levels using the GDP implicit price deflator (1.0118636). Additionally, the wage rates include an adjustment for the average level of fringe benefits of 30.3%, as reported by BLS in “Employer Costs for Employee Compensation, June 2009.”⁷ The cost of labor used in these wage-rate determinations are, therefore, estimates of total hourly compensation.

Human Resources Manager

General Industry/Maritime	\$68.41
Construction	\$69.12
Hydraulic Fracturing	\$72.53

Supervisor

General Industry/Maritime	\$34.09
Construction	\$43.12
Hydraulic Fracturing	\$42.77

Worker (Employee)

General Industry/Maritime	\$23.92
Construction	\$29.63
Hydraulic Fracturing	\$29.56

Clerical/Secretary⁸	\$19.01
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A. Exposure Assessment (§§ 1910.1053(d) and 1926.1053(d))

⁶See: http://www.bls.gov/news.release/archives/ocwage_05012009.pdf

⁷See: http://bls.gov/news.release/archives/ecec_09102009.pdf, p.1.

⁸The PEA does not reference a clerical/secretary wage rate. For purposes of this analysis, OSHA obtained this wage rate by using the wage rate in Table 1 of BLS’s “National Occupational Employment and Wage Estimates, 2008,” Office and Administrative Support Occupations, for “secretaries, except legal, medical and executive.” The Agency adjusted the rate for fringe benefits, and multiplied by the GDP implicit price deflator in the same manner as the other wage rates in the PEA.

The proposed Standards set forth requirements for assessing worker exposures to respirable crystalline silica. Except as provided for in the construction Standard under paragraph (d)(8),⁹ the Standard requires each employer to assess the exposure of any workers who are exposed, or may reasonably be expected to be exposed, to respirable crystalline silica at or above the action level. In some cases, this requirement will entail monitoring all exposed workers. In other cases, monitoring of "representative" workers is sufficient. However, OSHA assumes no current compliance with the proposed exposure-monitoring requirements.

1. Initial Exposure Assessment (paragraph (d)(2) of §§ 1910.1053 and 1926.1053)

The Standards require employers to conduct an initial exposure assessment by performing initial monitoring of any workers who are exposed, or may reasonably be expected to be exposed, to respirable crystalline silica at or above the action level. The Standards provide two exceptions to the requirement to conduct initial exposure monitoring. First, employers may rely on existing monitoring data to satisfy the requirement for an initial exposure assessment if they monitor worker exposures within the previous 12 months under conditions that closely resemble those currently prevailing. Second, to meet the requirement for an initial exposure assessment, the employer may use objective data that demonstrate that respirable crystalline silica will not be released in airborne concentrations at or above the action level under any expected conditions of processing, use, or handling.

For purposes of calculating initial exposure-assessment burden hours and costs, the Agency used the total number of covered workers exposed to silica at or above the action level (25 ug/m³): 175,801 workers in general industry/maritime and 850,690 workers in construction.¹⁰ In addition, the Agency estimates 15,399 covered workers at or above the action level in hydraulic fracturing industries.¹¹ OSHA interprets the initial exposure assessment as requiring first-year testing of at least one worker in each distinct job classification and work area who is, or may reasonably be expected to be, exposed to airborne concentrations of respirable crystalline silica at or above the action level. For both Standards, the Agency estimates that, on average, there are four workers per work area; thus, approximately 25% of these workers (43,950 in general industry/maritime; 212,673 in construction; 3,850 in hydraulic fracturing) represent the number of initial exposure assessments. Accordingly, employers will collect a total of 260,473 initial exposure assessments from workers (43,950 + 212,673+ 3,850). Each worker will incur 30 minutes (.5 hours) of lost work time during air monitoring. The burden hours and cost associated with these provisions are:

Burden hours: 43,950 (workers sampled in general industry/maritime) x .5 (hours of worker time) = **21,975 hours**

Cost: 21,975 burden hours x \$23.92 = **\$525,642**

⁹Paragraph (d)(8) of the proposed construction Standard makes an exception to the general requirement for exposure assessment when employees perform operations in Table 1 and the employer fully implements the controls specified for that operation. This exception relieves the employer of the burden of performing exposure monitoring in these situations.

¹⁰ Source: PEA, Table III-6.

¹¹ Source: Appendix A, "Hydraulic Fracturing," Table A-13 and ERG spreadsheet, "Exposure Monitoring Costs."

Burden hours: 212,673 (workers sampled in construction) x .5 (hours of worker time) = **106,337 hours**

Cost: 106,337 burden hours x \$29.63 = **\$3,150,765**

Burden hours: 3,850 (workers sampled in hydraulic fracturing) x .5 (hours of worker time) = **1,925 hours**

Cost: 1,925 burden hours x \$29.56 = **\$56,903**

Total burden hours: 21,975 + 106,337 + 1,925 = **130,237 hours**

Total cost: \$525,642 + \$3,150,765 + \$56,903 = **\$3,733,310**

2. Periodic and Additional Exposure Assessments (paragraphs (d)(3) and (4) of §§ 1910.1053 and 1926.1053)

The Standards require the employer to assess worker exposure to respirable crystalline silica on a periodic basis for workers exposed at or above the action level. For periodic monitoring, employers may assess worker exposures either under a fixed schedule or a performance-based schedule. Under the fixed schedule, the proposed Standards require semi-annual periodic sampling for exposures at or above the action level, and quarterly sampling for exposures above the permissible exposure limit (PEL) ($50 \mu\text{g}/\text{m}^3$). Employers must continue monitoring until they can demonstrate that exposures are no longer at or above the action level. Additionally, whenever there is a change in the production, process, control equipment, personnel, or work practices that may result in new or additional exposures at or above the action level, or when the employer has any reason to suspect that a change may result in new or additional exposures at or above the action level, the employer must conduct additional monitoring.

OSHA uses the fixed-schedule option under the frequency-of-monitoring requirements, and estimates that each employer will conduct periodic exposure monitoring (a) twice a year when initial or subsequent exposure monitoring reveals that worker exposures are at or above the action level, but at or below the PEL, and (b) four times a year when initial or subsequent exposure monitoring reveals that worker exposures are above the PEL.¹² For purposes of calculating these costs, OSHA assumed that each worker undergoing initial exposure assessment receives either 2 (if at or above the action level and at or below the PEL) or 4 (above the PEL) additional periodic exposure assessments in the same year as the initial exposure assessment.

The number of workers at or above the action level and at or below the PEL subject to periodic and additional exposure assessments under both Standards is derived from the PEA.¹³ For the general industry/maritime Standard, the Agency uses the number of workers wearing respirators to represent those workers exposed above the PEL after the initial exposure assessment. OSHA estimates that 11,922 workers in general/maritime industries are exposed above the PEL and will wear respirators.¹⁴ The Agency assumes that the employer will complete one representative,

¹² OSHA anticipates that the performance-based schedule option would generally be less expensive than the fixed schedule option for employers that choose the performance-based option.

¹³ Sources: PEA Table III-6 and ERG "Exposure Monitoring Costs" spreadsheet. (To calculate the number of workers at or above the action level and at or below the PEL, the number of workers exposed above the PEL was subtracted from the number of workers exposed above the action level.)

¹⁴ In Chapter V of the PEA, "Costs of Compliance," Table V-7 shows the number of workers using

periodic exposure assessment for every four workers per work area. For exposures above the PEL, OSHA assumes in the PEA that all employers in construction would choose to comply with Table 1 of the Standard, as permitted by 29 CFR 1926.1053(d)(8), “Specific Operations,” and, therefore, need not conduct periodic exposure monitoring.¹⁵ Therefore, in construction, it is estimated that 202,883 workers will undergo periodic monitoring (850,690 workers at or above the action level - 647,807 workers above the PEL = 202,883 workers). OSHA also estimates that approximately 15 percent of workers whose initial exposure or subsequent monitoring was at or above the action level would undergo additional monitoring. The burden hours and cost associated with these provisions are:

Burden hours: 175,801 (workers in general industry/maritime at or above the action level) – 11,922 (respirator users) / 4 (workers per area) x 2 (assessments per year) x 1.15 (additional assessments) x .5 (hours of worker time) = **47,116 hours**

Cost: 47,116 burden hours x \$23.92 = **\$1,127,015**

Burden hours: 11,922 (respirator users in general industry/maritime) / 4 (workers per area) x 4 (assessments per year) x 1.15 (additional assessments) x .5 (hours of worker time) = **6,857 hours**

Cost: 6,857 burden hours x \$23.92 = **\$164,019**

Burden hours: 202,883 (workers in construction at or above the action level and at or below the PEL) / 4 (workers per area) x 2 assessments/year x 1.15 (additional assessments) x .5 (hours of worker time) = **58,329 hours**

Cost: 58,329 burden hours x \$29.63 = **\$1,728,288**

Burden hours: 15,399 (workers in hydraulic fracturing at or above the action level) – 1,892 (respirator users) / 4 (workers per area) x 2 (assessments per year) x 1.15 (additional assessments) x .5 (hours of worker time) = **3,884 hours**

Cost: 3,884 burden hours x \$29.56 = **\$114,811**

Burden hours: 1,892 (respirator users in hydraulic fracturing) / 4 (workers per area) x 4 (assessments per year) x 1.15 (additional assessments) x .5 (hours of worker time) = **1,088 hours**

Cost: 1,088 burden hours x \$29.56 = **\$32,161**

All Periodic and Additional Exposure Assessments Combined

respirators in general industry/maritime, excluding abrasive blasters.

¹⁵OSHA anticipates that many employers, aware that their operations currently expose their workers to silica levels above the PEL, will choose to comply with Table 1 and avoid the costs of conducting exposure assessments. However, for purposes of estimating burden and costs, OSHA took a more conservative approach and assumed that all employers in at-risk construction activities will conduct initial exposure assessments and additional exposure monitoring as needed. For exposures above the PEL, the Agency assumes that all employers in construction would choose to comply with Table 1 and, therefore, would not have to conduct periodic exposure monitoring.

Total Burden Hours: 47,116 + 6,857 + 58,329 + 3,884 + 1,088 = **117,274 hours**
Total Cost: \$1,127,015 + \$164,019 + \$1,728,288 + \$114,811 + \$32,161 = **\$3,166,294**

3. Employee Notification of Assessment Results (paragraph (d)(6) of §§ 1910.1053 and 1926.1053)

Under the general industry/maritime Standard, employers must notify each affected worker within 15 working days after completing an exposure assessment. Under the construction Standard, the employer must notify each affected worker not more than 5 working days after completing the exposure assessment. The Standards require notification whenever an employer conducts an exposure assessment, regardless of whether or not worker exposure exceeds the action level or PEL.

The employer must either notify each affected worker in writing or post the monitoring results in an appropriate location accessible to all affected workers. In addition, whenever an employee exceeds the PEL, the written notification must contain a description of the corrective action(s) the employer is taking to reduce worker exposures to or below the PEL. The Agency estimates that a human resources manager takes 5 minutes to prepare and notify each worker of the results, either by posting or written notification. The following table summarizes the number of exposure assessments conducted:

Exposure Assessments ¹⁶	Initial	Periodic	Additional	Periodic and Additional
General Industry/Maritime				
<i>At or above AL</i>	43,950	-	-	-
<i>At or above AL and at or below PEL</i>	-	81,940	12,291	94,231
<i>Above PEL</i>	-	11,924	1,789	13,713
Subtotal	43,950	93,864	14,080	107,944
Construction				
<i>At or above AL</i>	212,673	-	-	-
<i>At or above AL and at or below PEL</i>	-	101,442	15,216	116,658
<i>Above PEL</i>	-	N/A	N/A	N/A
Subtotal	212,673	101,442	15,216	116,658
Hydraulic Fracturing				
<i>At or above AL</i>	3,850	-	-	-
<i>At or above AL and at or below PEL</i>	-	6,754	1,013	7,767
<i>Above PEL</i>	-	1,892	284	2,176
Subtotal	3,850	8,646	1,297	9,943
Total	260,473	203,952	30,593	234,545

¹⁶See Tables 1, 3 and 5 attached to this Supporting Statement for detailed exposure-assessment calculations.

Therefore, the annual burden hours and cost of this worker-notification requirement are:

Burden hours: (43,950 initial assessments + 107,944 periodic and additional assessments in general industry/maritime) x .08 hours = **12,152 hours**

Cost: 12,152 hours x \$68.41 (HR manager wage rate, general industry/maritime) = **\$831,318**

Burden hours: (212,673 initial assessments + 116,658 periodic and additional assessments in construction) x .08 hours = **26,346 hours**

Cost: 26,346 hours x \$69.12 (HR manager wage rate, construction) = **\$1,821,036**

Burden hours: (3,850 initial assessments + 9,943 periodic and additional assessments in hydraulic fracturing) x .08 hours = **1,103 hours**

Cost: 1,103 hours x \$72.53 (HR manager wage rate, hydraulic fracturing) = **\$80,001**

Total burden hours: 12,152 + 26,346 + 1,103 = **39,601**

Total cost: \$831,318 + \$1,821,036 + \$80,001 = **\$2,732,355**

4. Specific Operations (paragraph (d)(8)(i) of 1926.1053)

No burden hours or costs are assessed. See Item 2.

B. Regulated Areas (§ 1910.1053(e) and 1926.1053(e)).

1. Regulated Areas and Access Control (§ 1910.1053(e)(2) and 1926.1053(e)(2)).

No burden hours or costs are assessed. See Item 2.

2. Written Access Control Plan (§§ 1910.1053(e)(3) and 1926.1053(e)(3))

Paragraph (e)(3) of the Standards provide employers with the option to develop and implement a written access-control plan. The employer must include the following elements in the plan: competent-person provisions; notification and demarcation procedures; multi-employer workplace procedures; provisions for limiting access; provisions for supplying respirators; and provisions on protective work clothing procedures. The employer must review and evaluate the effectiveness of the written access control plan at least annually, and update it as necessary.

In construction, since the PEA assumes compliance with the requirements of Table 1, and since OSHA presumes that such compliance results in exposures below the PEL (except, possibly, when the Standard also requires respirator use), the Agency concludes that a direct correspondence exists between required respirator use and the need for regulated areas or written access-control plans. In construction, OSHA assumes that 25% of access control plans would be written access-control plans, rather than regulated areas, and each plan covers 8 workers. In

hydraulic fracturing, OSHA assumes that 100% of access control plans will be written access-control plans, and each plan covers 32 workers. In general industry and maritime industries, the Agency believes employers will prefer to establish regulated areas as it is expected to be the most practical alternative in fixed worksites; therefore, the PEA estimates that no establishments will establish written plans and the Agency does not assess costs for compliance with this provision.

For costing purposes, the Agency estimates that 265,710 full-time construction employees (FTE) at risk of exposures at or above the action level¹⁷ would be considered during the development of new written access control plans. Thus, OSHA estimates that written access control plans would cover 25% of construction FTE (66,428). With 8 workers covered by each written plan, OSHA estimates that there will be 8,304 (66,428/ 8) written plans developed in the construction industry. In addition, the Agency estimates that 15,399 employees in the hydraulic fracturing industry would be considered during the development of new written access control plans and all of these employees would be covered by the plan. With 32 workers covered by each written plan, OSHA estimates that there would be 481 (15,399/32) written plans developed in hydraulic fracturing industries. The Agency assumes that a supervisor will take 4 hours to develop each written plan.

In construction, the Agency estimates that there are 90,736 full-time employees (FTE using respirators above the PEL¹⁸; therefore, the same number would be engaged in the implementation of a written plan. OSHA estimates that written access control plans would cover 25% of these FTE (22,684). With 8 workers covered by each plan, OSHA estimates that there will be 2,836 (22,684/ 8) new written access control plans implemented. In hydraulic fracturing, the Agency also estimates that there are 2,714 full-time employees (FTE) using respirators above the PEL¹⁹; therefore, the same number would be engaged in the implementation of a written plan. OSHA estimates that written access control plans would cover 100% of these FTE. With 32 workers covered by each plan, OSHA estimates that there will be 85 (2,714/ 32) new written access control plans implemented. For both industries, the agency assumes that a supervisor would take 15 minutes (.25 hours) to revise the plan for a specific job, and 6 minutes (.1 hours) to communicate with workers about the job-specific site-control provisions. For each plan, OSHA estimates that there are 15 jobs per year (150 working days per year, divided by the average job length of 10 days). The burden hours and cost associated with these provisions are:

Development of New Written Access Control Plans

Burden hours: 8,304 new written access control plans in construction x 4 (hours of supervisor time to develop written plan) = **33,216 hours**

Cost: 33,216 x \$43.12 = **\$1,432,274**

Burden hours: 481 new written access control plans in hydraulic fracturing x 4 (hours of supervisor time to develop written plan) = **1,924 hours**

Cost: 1,924 x \$42.77 = **\$82,289**

¹⁷ Source: ERG "Program Cost" spreadsheet, "Exposure Control Plan Costs."

¹⁸ Ibid. This number excludes abrasive blasters with respirators and exposures below the PEL.

¹⁹ Ibid. This number excludes abrasive blasters with respirators and exposures below the PEL.

Total burden hours: 33,216 + 1,924 = 35,140
Total cost: \$1,432,274 + \$82,289 = \$1,514,563

Implementation of Written Access Control Plan

Burden hours: 2,836 plans in construction x 15 (jobs per year) x (.25 (hours of supervisor time to revise plan for specific job) + .1 (hours of supervisor time to communicate plan provisions to workers)) = **14,889 hours**
Cost: 14,889 burden hours x \$43.12 = **\$642,014**

Burden hours: 85 plans in hydraulic fracturing x 15 (jobs per year) x (.25 (hours of supervisor time to revise plan for specific job) + .1 (hours of supervisor time to communicate plan provisions to workers)) = **446 hours**
Cost: 446 burden hours x \$42.77 = **\$19,075**

Total burden hours: 14,889 + 446 = 15,335
Total cost: \$624,014 + \$19,075 = \$661,089

C. Methods of Compliance (§1910.1053(f))

No burden hours or costs are assessed. See Item 2.

D. Respiratory Protection (§§1910.1053(g) and 1926.1053(g))

Paragraph (g)(1) of the general industry/maritime and construction Standards establishes the requirements for use of respiratory protection in accordance with OSHA's Respiratory Protection Standard, 29 CFR 1910.134.²⁰ Employers must provide workers with respiratory protection when worker exposure to respirable crystalline silica is expected to be above the PEL. Specifically, employers must provide respirators as supplementary protection to reduce worker exposure during the installation and implementation of engineering and work-practice controls; during work operations for which engineering and work practice controls are not feasible; when the employer implements all feasible engineering and work-practice controls, but these controls are not sufficient to reduce exposure to or below the PEL; and during periods when any worker is in a regulated area or an area for which an access-control plan indicates that use of respirators is necessary.

Whenever employers use respirators to comply with the requirements of the Standards, paragraph (g)(2) in the general industry/maritime and construction Standards requires the employer to implement a comprehensive, written respiratory-protection program in accordance with the Respiratory Protection Standard. OSHA designed the respiratory protection program to ensure that workers use respirators properly in the workplace, and that respirators are effective in

²⁰ The Agency accounts for the information collection requirements of the Respiratory Protection Standard as it relates to respirable crystalline silica exposure in the Respiratory Protection Standard ICR, OMB Control Number 1218-0099, unless otherwise accounted for in this Supporting Statement.

protecting workers. The program must include procedures for selecting respirators for use in the workplace; medical evaluation of workers required to use respirator; fit-testing workers for respirator use; procedures for proper use of respirators in routine and reasonably foreseeable emergency situations; procedures and schedules for maintaining respirators; procedures to ensure adequate quality, quantity, and flow of breathing air for atmosphere-supplying respirators; training of workers in respiratory hazards they may be exposed to on the job; training of workers in the proper use of respirators; and procedures for evaluating the effectiveness of the program.

For workers in maritime (shipyard employment and maritime terminals), the only activity with silica exposures above the proposed PEL is abrasive blasting, and maritime workers engaged in abrasive blasting must already use respirators under existing OSHA standards. Therefore, the Agency estimated no additional costs for maritime workers to use respirators as a result of the proposed Standards

1. Establishment and Revision of Respiratory Protection Program §§ 1910.1053(g)(2) and 1926.1053(g)(2))

In general industry, the Agency estimates there are 2,846 small and medium-sized establishments with respirator users, and 1,423 of those establishments with respirator users needing a new program (50% of 2,846). The Agency also estimates there are 342 large establishments with respirator users in general industry, of which there are 171 large establishments (500 or more workers) with respirator users needing a new program (50% of 342).^{21,22} In construction, the Agency estimates there are 99,710 small and medium-sized establishments with respirator users, and 43,872 of those establishments with respirator users needing a new program (44% of 99,710). The Agency also estimates there are 4,596 large establishments with respirator users in construction, of which there are 2,022 large establishments with respirator users needing a new program (44% of 4,596).^{23,24}

In hydraulic fracturing, the Agency estimates there are 213 small-sized establishments with respirator users, and 64 of those establishments need a new program (30% of 213); 260 medium-sized establishments with respirator users, and 52 of those establishments need a new program (20% of 260); and 71 large establishments with respirator users, of which there are 4 large establishments needing a new program (5% of 71).²⁵

Employers will incur a cost burden to establish and revise respirator programs. The Agency projects that this expense will involve an initial 8 hours for large establishments, and 4 hours for all other firms. After the first year, OSHA estimates that 20 percent would revise the program every year, with the largest establishments expending 4 hours for program revision, and all other employers expending two hours for program revision. The Agency assumes that a human

²¹ The Agency estimates a total of 3,188 establishments with respirator users in general industry.

²² Table V-7 of the PEA and ERG's supporting spreadsheet, "Silica Program Costs," "GI Respirators" indicate the number of respirator users and establishments in general industry.

²³ The Agency estimates a total of 104,306 establishments with respirator users in construction.

²⁴ Table V-46 and ERG's supporting spreadsheet, "Construction," "Respirator Unit Costs," indicate the number of respirator users and establishments in construction.

²⁵ ERG's supporting spreadsheet, "Silica Program Costs," "HF_Respirators," indicates the number of respirator users and establishments in hydraulic fracturing.

resources manager will conduct the work associated with the establishment and revision of these programs. The burden hours and cost associated with these provisions are:

Establish New Programs in General Industry:

Burden hours: 342 (large general industry establishments with respirator users) x .5 (compliance rate) x 8 (hours of human resource manager time to establish new program) = **1,368 hours**

Cost: 1,368 burden hours x \$68.41 = **\$93,585**

Burden hours: 2,846 (all other general industry establishments with respirator users) x .5 (compliance rate) x 4 (hours of human resources manager time to establish new program) = **5,692 hours**

Cost: 5,692 burden hours x \$68.41 = **\$389,390**

Total burden hours: 1,368 + 5,692 = **7,060 hours**

Total cost: \$93,585 + \$389,390 = **\$482,975**

Establish New Programs in Construction:

Burden hours: (4,596 large construction establishments with respirator users) x (1 -.56) (compliance rate) x 8 (hours of human resource manager time to establish new program) = **16,176 hours**

Cost: 16,176 burden hours x \$69.12 = **\$1,118,085**

Burden hours: 99,710 (all other construction establishments with respirator users) x (1 -.56) (compliance rate) x 4 (hours of human resources manager time to establish new program) = **175,488 hours**

Cost: 175,488 burden hours x \$69.12 = **\$12,129,731**

Total burden hours: 16,176 + 175,488 = **191,664 hours**

Total cost: \$1,118,085 + \$12,129,731 = **\$13,247,816**

Establish New Programs in Hydraulic Fracturing:

Burden hours: 71 (large hydraulic fracturing establishments with respirator users) x (1-.95) (compliance rate) x 8 (hours of human resource manager time to establish new program) = **32 hours**

Cost: 32 burden hours x \$72.53 = **\$2,321**

Burden hours: 260 (medium hydraulic fracturing establishments with respirator users) x (1-.80) (compliance rate) x 4 (hours of human resources manager time to establish new program) = **208 hours**

Cost: 208 burden hours x \$72.53 = **\$15,086**

Burden hours: 213 (small hydraulic fracturing establishments with respirator users) x (1 - .70) (compliance rate) x 4 (hours of human resources manager time to establish new program) = **256 hours**

Cost: 256 burden hours x \$72.53 = **\$18,568**

Total burden hours: 32 + 208 + 256 = **496 hours**

Total cost: \$2,321 + \$15,086 + \$18,566 = **\$35,975**

Establish Programs in All Industries Combined:

Total burden hours: 7,060 + 191,664 + 496 = **199,220 hours**

Total cost: \$482,975 + \$13,247,816 + \$35,975 = **\$13,766,766**

2. Respiratory Protection Program: Fit-Testing for Respirator Use (§§ 1910.1053(g)(2) and 1926.1053(g)(2))

In addition to the development of a written respirator program, the Respiratory Protection Standard's information collection requirements require employers to administer fit tests for workers who will use negative-pressure or positive-pressure, tight-fitting facepieces. The Respiratory Protection Standard requires fit-testing to ensure that respirators adequately protect workers who must use them.

For costing purposes, the Agency assumes that workers who use respirators for protection against airborne respirable crystalline silica will receive a qualitative fit test (QLFT) prior to initial respirator use, and at least annually thereafter. The QLFT involves the introduction of a gas, vapor, or aerosol test agent into an area around the head of the respirator user. If the respirator user can detect the presence of the test agent through subjective means, such as odor, taste, or irritation, the respirator fit is inadequate. The QLFT record must include the date and type of fit test performed (e.g., irritant smoke, saccharin), worker information, type of respirator, and results of the fit test. Employers must maintain the fit-testing records until they administer the next fit test. Both employers and OSHA need these records to determine that: each worker received a fit test, both prior to starting respirator use and at least annually thereafter; each worker passed the fit test; and the model and size of the respirator used during fit-testing are the same as the model and size of the respirator used by the worker in the workplace.

For purposes of calculating respiratory protection costs, OSHA estimates that there are 11,922 respirator users in general industry²⁶ and 314,777 in construction.²⁷ Based on percentages in the

²⁶Table V-7 of the PEA shows the number of workers using respirators in general industry/maritime, excluding all abrasive blasters. Abrasive blasters are excluded because they must already wear respirators under other OSHA standards. OSHA assumes 10 percent of at-risk employees initially exposed above the PEL will use respirators.

²⁷Table V-46 of the PEA shows the number of respirator users in construction, which includes abrasive blasters wearing respirators above the PEL, is 336,244. However, ERG's cost assumptions for respiratory protection exclude 21,467 abrasive blasters because they must already wear respirators under other OSHA standards. Subtracting the abrasive blasters leaves a total of 314,777 respirator users in construction. Thus, this Supporting Statement relies on the number of users consistent with the cost assumptions (see: ERG spreadsheet, "Construction," "Respirator Unit Costs.") Furthermore, in construction, the number of respirator users assumed for written access control plans (90,736) differs from the number of respirator users assumed for the respiratory-protection program

PEA, 5,961 workers (50% of 11,922) in general industry and 138,502 (44% of 314,777) in construction will use respirators at establishments not currently in compliance with the Respiratory Protection Program Standard. In addition, the Agency estimates that there are 1,892 respirator users in hydraulic fracturing.²⁸ Based on percentages in the PEA, 357 workers will use respirators at hydraulic fracturing establishments not currently in compliance with the Respiratory Protection Program Standard (128 workers in small establishments (30% of 426); 208 workers in medium establishments (20% of 1,040); and 21 workers in large establishments (5% of 426). The Agency estimates that each worker takes 1 hour to complete a fit test, in-house, and supervisors will conduct the fit-testing for workers in groups of 4 (.25 hours of supervisor time per worker).²⁹ The annual burden hours and cost associated with fit testing are:

Burden hours: 5,961 (fit tests) x 1 (hours of worker time, general industry) = **5,961 hours**

Cost: 5,961 hours x \$23.92 = **\$142,587**

Burden hours: 5,961 (fit tests) x .25 (hours of supervisor time, general industry) = **1,490 hours**

Cost: 1,490 hours x \$34.09 = **\$50,794**

Burden hours: 138,502 (fit tests) x 1 (hours of worker time, construction) = **138,502 hours**

Cost: 138,502 hours x \$29.63 = **\$4,103,814**

Burden hours: 138,502 (fit tests) x .25 (hours of supervisor time, construction) = **34,626 hours**

Cost: 34,626 hours x \$43.12 = **\$1,493,073**

Burden hours: 357 (fit tests) x 1 (hours of worker time, hydraulic fracturing) = **357 hours**

Cost: 357 hours x \$29.56 = **\$10,553**

Burden hours: 357 (fit tests) x .25 (hours of supervisor time, hydraulic fracturing) = **89 hours**

Cost: hours x \$42.77 = **\$3,807**

Total burden hours: 5,961 + 1,490 + 138,502 + 34,626 + 357 + 89 = **181,025 hours**

Total cost: \$142,587 + \$50,794 + \$4,103,814 + \$1,493,073 + \$10,553 + \$3,807 = **\$5,804,628**

costs (see: ERG spreadsheet, “Silica Program Costs,” “Exposure Control Plan Costs.” See, also, the discussion of the basis for this difference in cost methodology beginning on pp. V-164 and V-197 of the PEA, respectively.

²⁸ERG’s spreadsheet, “Silica Program Costs,” “HF_Respirators,” indicates the number of respirator users in hydraulic fracturing.

²⁹The respirator-cost assumptions in the PEA are based on data from OSHA’s final rule on personal protective equipment, specifically, the Final Economic and Regulatory Flexibility Analysis for Assigned Protective Factors, Table III-6, OSHA Docket Number: OSHA-2008-0031-0060.

3. Respiratory Protection Program: Establishing and Maintaining Respirator Fit Testing Records (§§ 1910.1053(g)(2) and 1926.1053(g)(2))

The fit-testing provisions of the Respiratory Protection Standard require employers to establish and maintain a record of the fit tests administered to workers. Employers will collect 144,820 fit-testing records in the first year. OSHA estimates that a clerical worker spends 5 minutes (.08 hours) annually establishing and maintaining each of these records. The burden hours and cost associated with these provisions are:

Burden hours: 144,820 (fit tests) x .08 (hours of clerical time) = **11,586 hours**
Cost: 11,586 hours x \$19.01 = **\$220,250**

E. Medical Surveillance (§§ 1910.1053(h) and 1926.1053(h))

Employers must make medical surveillance available at no cost, and at a reasonable time and place, for exposed workers. In addition, employers must make available medical examinations for workers, and they must assure that a PLHCP performs all medical examinations and procedures required by the Standards. Although OSHA believes that some affected establishments currently provide some medical testing to their silica-exposed employees, for costing purposes the Agency has assumed no current compliance with the proposed health screening requirements. The following paragraphs describe the specific medical examinations in detail.

1. Initial Medical Examination (§§1910.1053(h)(2)(i)-(vi) and 1926.1053(h)(2)(i)-(vi))

Under the medical surveillance requirements specified by §§ 1910.1053(h) and 1926.1053(h), employers must make available medical surveillance to workers who receive occupational exposure to respirable crystalline silica above the proposed PEL for 30 or more days a year. An initial medical examination must be made within 30 days after initial assignment, unless the worker has received an examination meeting the requirements of this Standard within the last three years (by §§ 1910.1053(h)(2) and 1926.1053(h)(2)). The content of the initial medical examinations is described by §§ 1910.1053(h)(2)(i)-(vi) and 1926.1053(h)(2)(i)-(vi), and consists of: (1) a medical and work history, (2) a physical examination with special emphasis on the respiratory system, (3) a chest x-ray, (4) a pulmonary-function test, (5) testing for latent tuberculosis (TB) infection, and (6) any other tests deemed appropriate by the PLHCP. Employers will provide these medical examinations during the first year of this ICR, with subsequent medical examinations for these workers described in the paragraphs of this section, below.

Tables V-10 and V-39 of the PEA, and ERG's supporting spreadsheets, describe the Agency's assumptions for medical surveillance costs. The Agency estimated separate costs for existing workers and for new hires as a function of the employment size (i.e., 1-19, 20-499, or 500+) of affected establishments. For existing workers in all industries, OSHA estimates 20 percent of establishments with fewer than 20 workers, 75 percent of establishments with 20-499 workers, and 100 percent of establishments with 500 or more workers would have the initial health screening conducted on-site. For new workers in all industries, OSHA estimates that 10 percent

of establishments with fewer than 20 workers, 50 percent of establishments with 20-499 workers, and 90 percent of establishments with 500 or more workers would have the initial health screening for new hires conducted on-site. In OSHA’s experience, larger establishments are more likely than smaller establishments to have the PLHCP provide the health-screening services at the establishment’s worksite. OSHA assumes for purposes of this ICR that contract PLHCPs will conduct all medical examinations.

The Agency estimates that 75% of new workers in general industry/maritime and 40% of new workers in construction and hydraulic fracturing will require initial medical examinations.³⁰ Therefore, for purposes of calculating medical surveillance costs, OSHA estimates that 353,308 existing workers (15,172 workers in general industry; 336,244 workers in construction; and 1,892 in hydraulic fracturing) above the PEL will require initial medical examinations.³¹ To estimate the number of new workers, OSHA assumes a separation rate (layoffs, quits, and retirements) of 27.2% in general industry/maritime and hydraulic fracturing, and 64% in construction.³² Based on these assumptions, a total of 89,378 new workers (3,095 in general industry, 86,079 in construction, and 206 in hydraulic fracturing) will also require initial medical examinations.

The Agency estimates that a worker will take 2 hours to complete the initial medical examination, consisting of: a complete occupational health history survey (including the medical questionnaire for respirator use); a physical examination by a PLHCP (including a follow-up medical examination for respirator use, if needed); a chest x-ray; a pulmonary function test; a dermal TB test; and other tests deemed appropriate by the PLHCP. The estimated travel time for workers to travel off-site for the initial medical examination is 1 hour for general industry/maritime and hydraulic fracturing, and 1.5 hours for construction.³³ The detailed burden hours and cost associated with the initial medical examination provision are available in Tables 12 and 13 in the attachments to this Supporting Statement.

Burden hours (existing workers, Table 12): 923,048 hours
Cost (existing workers, Table 12): \$27,154,740

Burden hours (new workers, Table 13): 258,284 hours
Cost (new workers, Table 13): \$7,609,573

Additionally, Tables 15 and 16 in the attachments to this Supporting Statement show the burden hours and costs associated with the worker returning to the PLHCP for a reading of the dermal TB test administered during the initial medical examination. OSHA estimates that all workers undergoing initial medical surveillance will take 5 minutes (.08 hours) for the return visit;

³⁰ Source for % of new hires tested in initial year: PEA Tables V-10 and V-39 and ERG spreadsheet “Silica Program Costs,” “Medical Surveillance.”

³¹Source: PEA Tables V-11 and V-40 and ERG spreadsheet “Silica Program Costs,” “Surveillance Costs”; the number of respirator users who are subject to medical surveillance includes abrasive blasters above the PEL.

³²Source for separations rate: PEA Tables V-10 and V-39 and ERG spreadsheet “Silica Program Costs,” “Medical Surveillance.”

³³The Agency based the difference in travel times on the assumption that construction establishments are more geographically dispersed than general industry/maritime/hydraulic fracturing establishments.

estimated travel time is 1 hour for general industry/maritime and hydraulic fracturing and 1.5 hours for construction workers.

Burden hours (existing workers, Table 15): 244,697 hours
Cost (existing workers, Table 15): \$7,220,559

Burden hours (new workers, Table 16): 86,667 hours
Cost (new workers, Table 16): \$2,558,625

2. Periodic Medical Examination (§§ 1910.1053(h)(3) and 1926.1053(h)(3))

Under §§ 1910.1053(h)(3) and 1926.1053(h)(3), employers must make available periodic medical examinations at least every three years (or more frequently if recommended by the PLHCP) to the workers who received the initial medical examinations listed in the previous item. The content of the periodic medical examinations is identical to the requirements of paragraph (h)(2), with the exception of the testing for latent tuberculosis infection required by paragraph (h)(2)(v).

OSHA estimates that a worker will take 2 hours to complete the periodic medical examination, consisting of: a complete occupational health history survey; a physical examination by a PLHCP; a chest x-ray; a pulmonary-function test; and other tests deemed appropriate by the PLHCP, including a dermal TB test, if recommended. The estimated travel time for workers to travel off-site for the initial medical examination is 1 hour for general industry/maritime and hydraulic fracturing, and 1.5 hours for construction. The detailed burden hours and cost associated with the periodic medical examination provisions are available in Table 18 and 19 in the attachments to this Supporting Statement; however, because these examinations will not occur until the third year after implementation of the Standards, the Agency did not include the burden hours and costs for these examinations in this Supporting Statement.

Additionally, Table 20 in the attachments to this Supporting Statement shows the burden hours and costs associated with workers recommended for TB testing during the periodic medical examination. The Agency's assumptions are identical to the TB testing assumptions for initial medical surveillance described above, except that OSHA estimates that 15% of workers in general industry³⁴ and hydraulic fracturing³⁵, and 20% of workers in construction will be provided these tests³⁶. Because these tests will not occur until three years after implementation of the Standards, the Agency did not include the burden hours and costs for these tests in this Supporting Statement.

3. Information Provided to the PLHCP and Pulmonary Specialist (§§ 1910.1053(h)(4)(i)-(iv), (h)(6)(ii) and 1926.1053(h)(4)(i)-(iv), (h)(6)(ii))

³⁴ See: PEA, Table V-10.

³⁵ Source: ERG spreadsheet, "Silica Program Costs," "Medical Surveillance."

³⁶ See: PEA, Table V-39.

Paragraph (h)(4) of the Standards requires the employer to provide the PLHCP with the following information: a copy of the appropriate standard; a description of the affected worker's former, current, and anticipated duties as they relate to respirable crystalline silica exposure; the worker's former, current, and anticipated exposure level; a description of any personal protective equipment used or to be used by the worker, including when and for how long the worker used that equipment; and information from records of employment-related medical examinations previously provided to the affected worker that are within the control of the employer. Paragraph (h)(6)(ii) of the Standards requires the employer to provide the pulmonary specialist with the same information that the employer provides to the original PLHCP. In the PEA, OSHA estimates that there will be 61 new cases of silicosis a year among general industry and maritime workers, 396 new cases among construction workers, and 10 new cases among hydraulic fracturing workers.³⁷

An employer must provide the PLHCP with specific information on each worker who is medically examined. For initial surveillance, OSHA assumes that a human resource manager requires 15 minutes (.25 hours) to develop the specified information and provide it to the PLHCP. Having already developed the information for initial surveillance, it is not necessary to do so again for a periodic medical or for the pulmonary specialist examination; therefore, human resources managers need only provide the relevant information to the PLHCP or pulmonary specialist prior to the examination, a task that the Agency believes will take 5 minutes (.08 hours). The burden hours and cost associated with these provisions are:

Burden hours: 18,267³⁸ (initial examinations, general industry/maritime) x .25 (hours of HR manager time) = **4,567 hours**
Cost: 4,567 hours x \$68.41 = **\$312,428**

Burden hours: 422,322³⁹ (initial examinations, construction) x .25 (hours of HR manager time) = **105,581 hours**
Cost: 105,581 hours x \$69.12 = **\$7,297,759**

Burden hours: 2,098⁴⁰ (initial examinations, hydraulic fracturing) x .25 (hours of HR manager time) = **525 hours**
Cost: 525 hours x \$72.53 = **\$38,078**

Burden hours: 61 (pulmonary-specialist examinations, general industry/maritime) x .08 (hours of HR manager time) = **5 hours**
Cost: 5 hours x \$68.41 = **\$342**

³⁷See: PEA, Tables V-12 and V-41 and ERG spreadsheet, "Silica Program Costs, "Surveillance Costs."

³⁸This figure includes the number of existing and new workers requiring initial medical examinations in general industry/maritime, as referenced in paragraph 1 of this section.

³⁹This figure includes the number of existing and new workers requiring initial medical examinations in construction, as referenced in paragraph 1 of this section.

⁴⁰This figure includes the number of existing and new workers requiring initial medical examinations in hydraulic fracturing, as referenced in paragraph 1 of this section.

Burden hours: 396 (pulmonary-specialist examinations, construction) x .08 (hours of HR manager time) = **32 hours**
Cost: 32 hours x \$69.12 = **\$2,212**

Burden hours: 10 (pulmonary-specialist examinations, hydraulic fracturing) x .08 (hours of HR manager time) = **1 hours**
Cost: 1 hour x \$72.53 = **\$73**

Total burden hours: 4,567 + 105,581 + 525 + 5 + 32 + 1 = **110,711 hours**
Total cost: \$312,428 + \$7,297,759 + \$38,078 + \$342 + \$2,212 + \$73 =
\$7,650,892

4. PLHCP's Written Medical Opinion (§§ 1910.1053(h)(5)(i) and 1926.1053(h)(5)(i)) and Pulmonary Specialist's Written Medical Opinion (1910.1053(h)(6)(iii) and 1926.1053(h)(6)(iii))

These paragraphs require the employer to obtain a written medical opinion from the PLHCP within 30 days for each medical examination performed on a worker. This written opinion must contain the following information: a description of the worker's health condition as it relates to exposure to respirable crystalline silica, including the PLHCP's opinion as to whether the worker has any detected medical condition(s) that would place the worker at increased risk of material impairment to health from exposure; any recommended limitations on the worker's exposure or use of personal protective equipment; a statement that a pulmonary specialist should examine the worker if the chest X-ray provided is classified as 1/0 or higher, or if referral is otherwise deemed appropriate by the PLHCP; a statement that the PLHCP explained to the worker the results of the medical examination, including any medical conditions related to respirable crystalline silica exposure that require further evaluation or treatment; and any special provisions for use of protective clothing or equipment. In this opinion, the PLHCP must not reveal to the employer specific findings or diagnoses unrelated to occupational exposure to respirable crystalline silica. For examinations conducted by a pulmonary specialist, the employer must obtain a written medical opinion from the specialist that contains the same information as the PLHCP's opinion, with the exception of the statement regarding referral of the worker to a pulmonary specialist. Employers must provide a copy of the PLHCP's written medical opinion to the examined worker within 2 weeks after receiving the opinion.

In determining the burden hours and burden cost resulting from this requirement, OSHA assumes that a human resources manager will take 5 minutes (.08 hours) to provide the medical opinion to a worker within the required 2-week period.

Burden hours: (18,267 (initial examinations, general industry/maritime) + 61 (pulmonary specialist examinations)) x .08 (hours of HR manager time) = **1,466 hours**
Cost: 1,466 hours x \$68.41 = **\$100,289**

Burden hours: (422,323 (initial examinations, construction) + 396 (pulmonary specialist examinations)) x .08 (hours of HR manager time) = **33,817 hours**

Cost: 33,817 hours x \$69.12 = **\$2,337,431**

Burden hours: (2,098 (initial examinations, hydraulic fracturing) + 10 (pulmonary specialist examinations)) x .08 (hours of HR manager time) = **169 hours**

Cost: 169 hours x \$72.53 = **\$12,258**

Total burden hours: 1,466 + 33,817 + 169 = **35,452 hours**

Total cost: \$100,289 + \$2,337,500 + \$12,258 = **\$2,449,978**

5. Additional Medical Examinations (§§ 1910.1053(h)(6), (h)(6)(i) and (h)(6)(ii) and 1926.1053(h)(6), (h)(6)(i) and (h)(6)(ii).)

The requirements specified by §§ 1910.1053(h)(6), (h)(6)(i) and (h)(6)(ii) and 1926.1053(h)(6), (h)(6)(i) and (h)(6)(ii) address the additional medical examination employers must make available to workers if the PLHCP's written medical opinion indicates that a pulmonary specialist should examine the worker. The employer must make the examination available within 30 days after receiving the PLHCP's written medical opinion. The pulmonary specialist must be provided with the same information that the employer is required to give the PLHCP, under paragraph (h)(4), described in paragraph 4 of this section.

As noted in this Section, paragraph 3, above, OSHA estimates that there will be 61 new cases of silicosis a year among general industry and maritime workers, 396 new cases among construction workers, and 10 new cases among hydraulic fracturing workers. The Agency assumes that the number of silicosis cases is the same as the number of cases referred to a pulmonary specialist for examination. OSHA estimates that a worker will take 1 hour to complete the examination. The estimated travel time for workers to travel off-site for the examination is 1 hour for general industry/maritime and hydraulic fracturing, and 1.5 hours for construction. The detailed burden hours and cost associated with the pulmonary-specialist examination provision are available in Table 23 in the attachments to this Supporting Statement.

Total burden hours: 742 hours

Total cost: \$21,545

F. Communication of Hazards to Employees (§§ 1910.1053(i) and 1926.1053(i))

No burden hours or costs are assessed. See Item 2.

G. Recordkeeping (§§ 1910.1053(j) and 1926.1053(j))

1. Air-Monitoring Data (§§ 1910.1053(j)(1) and 1926.1053(j)(1)).

Employers performing air monitoring to determine worker respirable crystalline silica exposures must keep accurate records of all air-monitoring results used or relied on to assess worker exposure to respirable crystalline silica. These records must include the following information: the date of measurement for each sample taken; the operation monitored; sampling and analytical methods used; the number, duration, and results of samples taken; the identity of the laboratory

that performed the analysis; the type of personal protective equipment, such as respirators, worn by the workers monitored; and the name, Social Security number, and job classification of all workers represented by the monitoring, indicating the workers monitored. Also, employers must maintain exposure records, and make them available, in accordance with 29 CFR 1910.1020. OSHA considers air-monitoring data to be worker-exposure records that employers must maintain for at least 30 years in accordance with 29 CFR 1910.1020(d)(1)(ii).

Employers must establish and maintain an exposure-monitoring record for each worker on whom they conduct an exposure assessment. Using information contained in an earlier section of this ICR (see section A of Item 12, Exposure Assessment) OSHA finds that employers monitored 495,018 workers (260,473 initial; 203,952 periodic; and 30,593 additional assessments combined). OSHA assumes that it will take a human resources manager 10 minutes (.17 hours) to establish and maintain the air-monitoring records associated with exposure monitoring. In subsequent years, the Agency estimates that it will require 5 minutes (.08 hours) to update periodic and additional assessment records. The burden hours and cost associated with these provisions are:

Burden hours: 151,894 (exposure assessments, general industry/maritime) x .17 (hours of HR manager time) = **25,822 hours**
Cost: 25,822 x \$68.41 = **\$1,766,483**

Burden hours: 329,331 (exposure assessments, construction) x .17 (hours of HR manager time) = **55,986 hours**
Cost: 55,986 x \$69.12 = **\$3,869,752**

Burden hours: 13,793 (exposure assessments, hydraulic fracturing) x .17 (hours of HR manager time) = **2,345 hours**
Cost: 2,345 x \$72.53 = **\$170,083**

Total burden hours: 25,822 + 55,986 + 2,345 = **84,153 hours**
Total cost: \$1,766,483 + \$3,869,752 + \$170,083 = **\$5,806,318**

2. Objective Data (§§ 1910.1053(j)(2) and 1926.1053(j)(2))

No burden hours or costs are assessed. See Item 2.

3. Medical Surveillance (§§ 1910.1053(j)(3) and 1926.1053(j)(3))

This provision requires employers to maintain an accurate record for each worker subject to medical surveillance under the Standards. These records must include the following information: the name and Social Security number of the worker; a copy of the PLHCP's and pulmonary specialist's written opinions about the worker; and a copy of the information provided to the PLHCPs and pulmonary specialists as required by proposed paragraph (h)(4). The information provided to the PLHCPs and pulmonary specialists includes the worker's duties as they relate to crystalline silica exposure, crystalline silica exposure levels, descriptions of personal protective equipment used by the worker, and information from employment-related

medical examinations previously provided to the worker. Also, the employer must maintain worker medical records in accordance with 29 CFR 1910.1020. Employers must maintain medical records for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.1020(d)(1)(i).

Employers must establish and maintain accurate records containing specific information for each worker subject to medical surveillance. Using information contained in an earlier section of this ICR (see section E of Item 12, Medical Surveillance) OSHA finds that employers must establish and maintain records for 443,154 workers who receive initial medical surveillance (18,267 in general industry/maritime; 422,322 in construction; 2,098 in hydraulic fracturing) and additional medical examinations (61 in general industry/maritime; 396 in construction; 10 in hydraulic fracturing). OSHA assumes that it will take a human resources manager 15 minutes (.25 hours), on average per screening, to establish and prepare the file for workers' initial medical-examination records. OSHA estimates that it will take 5 minutes to prepare and maintain workers' medical records for additional medical examinations, and for periodic medical examinations conducted in subsequent years. The burden hours and cost associated with these provisions are:

Burden hours: $((18,267 \text{ (initial examinations, general industry/maritime)} \times .25 \text{ (hours of HR manager time)}) + (61 \text{ (additional examinations, general industry/maritime)} \times .08 \text{ (hours of HR manager time)})) = 4,572 \text{ hours}$
Cost: $4,572 \times \$68.41 = \$312,770$

Burden hours: $((422,322 \text{ (initial examinations, construction)} \times .25 \text{ (hours of HR manager time)}) + (396 \text{ (additional examinations, construction)} \times .08 \text{ (hours of HR manager time)})) = 105,613 \text{ hours}$
Cost: $105,613 \times \$69.12 = \$7,299,971$

Burden hours: $((2,098 \text{ (initial examinations, hydraulic fracturing)} \times .25 \text{ (hours of HR manager time)}) + (10 \text{ (additional examinations, hydraulic fracturing)} \times .08 \text{ (hours of HR manager time)})) = 526 \text{ hours}$
Cost: $526 \times \$72.53 = \$38,151$

Total burden hours: $4,572 + 105,613 + 526 = 110,711 \text{ hours}$
Total cost: $\$312,770 + \$7,299,971 + \$38,151 = \$7,650,892$

4. Disclosing Information During an Inspection

As noted in Item 14 below, the Agency estimates that approximately 7,477 establishments will be subject to an OSHA inspection during which the employer may have to disclose the records required by the Standard to an OSHA compliance officer. The Agency estimates it takes 10 minutes (.17 hours) of a supervisor's time to make the disclosure. The annual burden hours and cost for this task are estimated to be:

Burden hours: $7,477 \text{ establishments} \times .17 \text{ hour} = 1,271 \text{ hours}$
Cost: $1,271 \text{ burden hours} \times \$43.12 = \$54,805$

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

- **The cost estimate should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life) and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information. Include descriptions of methods used to estimate major cost factors including system and technology acquisition, expected useful life on capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.**
- **If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collections services should be part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.**
- **Generally, estimates should not include purchases of equipment or services, or portions thereof, made: (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.**

The Agency identified no capital costs and provided the specific and total operation and maintenance and purchase of services costs for the paperwork requirements contained in the Standards in the fourth column (“Proposed Operating and Maintenance Cost (Item 13)”) of Table A (“Summary of Burden Hours, Burden-Hour Cost, and Capital Cost Under Items 12 and 13 of this Supporting Statement”).

Exposure Assessment

The Agency assumes that employers will incur costs for analyzing the samples taken for exposure assessment. The Agency estimates that the cost for contract industrial hygienist services for each exposure assessment sample will range from \$62.50 to \$250, depending on the size of the establishment, and laboratory fees and shipping will cost an additional \$133.38. The detailed costs are shown in Tables 2 and 4.

Medical Examinations

The Agency assumes that employers will incur costs for contract medical exams. The Agency estimates the cost for an initial or periodic medical examination to be \$312.82, a pulmonary specialist exam to be \$190.28, and a TB test to be \$15.00. The detailed costs are shown in Tables 14, 17, 19, and 24.

The total operation and maintenance cost for the exposure assessments and medical examinations provided under the Standards are \$273,504,281.

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

OSHA estimates that a compliance officer (GS-12, step 5), with an hourly wage rate of \$37.37,⁴¹ would spend about 15 minutes (.25 hours) during an inspection reviewing the documents required by the Standards. The Agency estimates that its compliance officers will conduct approximately 7,477⁴² inspections during each year covered by this ICR. OSHA considers other expenses, such as equipment, overhead, and support staff salaries to be normal operating expenses that would occur without the paperwork requirements specified by the Standards. Therefore, the total annual cost of these paperwork requirements to the Federal government is:

$$\text{Cost: } 7,477 \text{ inspections} \times .25 \text{ hours} \times \$37.37 = \$69,854$$

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

This is a new collection of information. The proposed Standards include collection of information requirements for: conducting worker exposure assessments, establishing and implementing written access plans, establishing and implementing a respiratory protection program, conducting medical surveillance of workers, providing examining physicians with specific information, obtaining written physician's opinions and providing those opinions to workers and establishing and maintaining workers' exposure assessment and medical surveillance records. The burden hours for the collection of information requirements contained in the proposed Standards would result in a total program change of 2,585,164 hours and a program change cost of \$99,777,182. In addition, the total operation and maintenance cost for the exposure assessments and medical examinations provided under the Standard is \$273,504,281.

16. For collection of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used.

⁴¹Source: U.S. Office of Personnel Management, *General Schedule and Locality Tables, Salary Table 2013-RUS*, http://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/2013/general-schedule/rus_h.pdf

⁴² OSHA determined the number of inspections by calculating an overall inspection rate of 1.4% (0.014) for all employers under its jurisdiction, then applying this percentage to the number of affected establishments covered by the Standard (534,041). Source: PEA Table III-6 and Table A-4 of Appendix A.

Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

OSHA will not publish the information collected under the Standards.

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

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

18. Explain each exception to the certification statement.

OSHA is not requesting an exception to the certification statement.

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

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

Table A

**Summary of Burden Hours, Burden-Hour Cost and Capital Cost
Under Items 12 and 13 of this Supporting Statement⁴³**

Collection of Information Requirements (Item 2)	Number of Responses	Proposed Burden Hours (Item 12)	Proposed Burden Hour Cost (Item 12)	Proposed Operating and Maintenance Cost (Item 13)
A. Exposure Assessment (paragraph (d) of §§ 1910.1053 and 1926.1053)				
1. Initial Exposure Assessment (paragraph (d)(2)) of §§ 1910.1053 and 1926.1053)				
a. Worker Time and Cost - Initial Exposure Assessment (Table 1)	260,473	130,237	\$3,733,310	–
b. Contract Cost for an Industrial Hygienist to Conduct Analysis of Initial Exposure Assessment (Table 2)	–	–	–	\$34,337,351
c. Contract Cost for a Laboratory to Conduct Analysis of Initial Exposure Assessment (Table 2)	–	–	–	\$34,741,890
2. Periodic and Additional Exposure Assessment (paragraphs (d)(3) and (d)(4) of §§ 1910.1053 and 1926.1053)				
a. Worker Time and Cost - Periodic and Additional Exposure Assessment (Table 3)	234,545	117,274	\$3,166,294	–
b. Contract Cost for an Industrial Hygienist to Conduct Analysis of Periodic Exposure Assessment (Table 4)	–	–	–	\$27,933,605
c. Contract Cost for a Laboratory to Conduct Analysis of Periodic Exposure Assessment (Table 4)	–	–	–	\$31,284,011
3. Employee Notification of Assessment Results (paragraph (d)(6) of §§ 1910.1053 and 1926.1053)				

⁴³ Tables 1-26, referenced in this Supporting Statement, may be downloaded from www.reginfo.gov.

Collection of Information Requirements (Item 2)	Number of Responses	Proposed Burden Hours (Item 12)	Proposed Burden Hour Cost (Item 12)	Proposed Operating and Maintenance Cost (Item 13)
a. Human Resources Manager Time to Notify Workers of Exposure Assessment Results (Table 5)	495,018	39,601	\$2,732,355	–
4. Specific Operations (paragraph (d)(8)(ii) of § 1926.1053				
	0	0	–	–
B. Regulated Areas (paragraph (e) of §§ 1910.1053 and 1926.1053)				
1. Regulated Areas and Access Control (§ 1910.1053(e)(2) and 1926.1053(e)(2))				
	0	0	–	–
2. Written Access-Control Plan (paragraph (e)(3) of §§ 1910.1053 and 1926.1053)				
a. Supervisor Time and Cost - Development of Plan (Table 6)	8,785	35,140	\$1,514,563	–
b. Supervisor Time and Cost- Implementation of Plan (Table 7)	43,815	15,335	\$661,089	–
C. Methods of Compliance. Compliance with 29 CFR 1915, Subpart I, "Personal Protective Equipment" (paragraph (f)(2) of § 1910.1053)				
1. Hazard Assessment and Verification (1915.152(b))	0	0	–	–
2. Training and Verification (1915.152(e))	0	0	–	–
D. Respiratory Protection (paragraph (g) of §§ 1910.1053 and 1926.1053)				
1. Respiratory Protection Program: Costs to Establish Program (paragraph (g)(2) of §§ 1910.1053 and 1926.1053)				
a. Human Resources Manager Time and Cost to Establish Respiratory Protection Program (Tables 8, 8a & 9)	47,608	199,220	\$13,766,766	–

Collection of Information Requirements (Item 2)	Number of Responses	Proposed Burden Hours (Item 12)	Proposed Burden Hour Cost (Item 12)	Proposed Operating and Maintenance Cost (Item 13)
2. Respiratory Protection Program: Costs to Revise Program (paragraph (g)(2) of §§ 1910.1053 and 1926.1053)				
a. Human Resources Manager Time and Cost to Revise Respiratory Protection Program (Tables 8, 8a & 9)	0	0	–	–
3. Respirator Protection: Qualitative Fit Test Costs (paragraph (g)(2) of §§ 1910.1053 and 1926.1053)				
a. Supervisor and Worker Time and Cost to Complete Fit-Testing (Table 10)	289,640	181,025	\$5,804,628	–
b. Clerical Time and Cost to Establish and Maintain Fit Test Record (Table 11)	144,820	11,586	\$220,250	–
c. Cost of Materials for Qualitative Fit Test	–	–	–	\$0
E. Medical Surveillance (paragraph (h) of §§ 1910.1053 and 1926.1053)				
1. Initial Medical Examination (§§1910.1053(h)(2)(i)-(vi) and 1926.1053(h)(2)(i)-(vi))				
a. Worker Time and Cost to Complete the Initial Medical Examination - Existing Workers (Table 12)	353,308	923,048	\$27,154,740	–
b. Worker Time and Cost to Complete the Initial Medical Examination - New Workers (Table 13)	89,379	258,284	\$7,609,573	–
c. Contract Cost for a PLHCP to Conduct the Initial Medical Examination (Table 14)	–	–	–	\$138,481,348
d. Worker Time and Cost for Dermal TB Test Return Reading During Initial Medical Examination - Existing Workers (Table 15)	353,308	244,697	\$7,220,559	–
e. Worker Time and Cost for Dermal TB Test Return Reading During Initial Medical Examination - New Workers (Table 16)	89,173	86,677	\$2,558,625	–
f. Contract Cost for a PLHCP to Conduct the	–	–	–	\$6,637,215

Collection of Information Requirements (Item 2)	Number of Responses	Proposed Burden Hours (Item 12)	Proposed Burden Hour Cost (Item 12)	Proposed Operating and Maintenance Cost (Item 13)
Dermal TB Test During Initial Medical Examination (Table 17)				
2. Periodic Medical Examination (§§ 1910.1053(h)(3)(i)-(ii) and 1926.1053(h)(3)(i)-(ii))				
a. Worker Time and Cost to Complete the Periodic Medical Examination (Table 18)	0	0	0	–
b. Contract Cost for a PLHCP to Conduct the Periodic Medical Examination (Table 19)	–	–	–	0
c. Worker Time and Cost to Complete Dermal TB Test Return Reading During Periodic Medical Examination (Table 20)	0	0	0	–
d. Contract Cost for a PLHCP to Conduct Dermal TB Test During Periodic Medical Examination (Table 17)	–	–	–	0
3. Information Provided to the PLHCP (§§ 1910.1053(h)(4)(i)-(iv), (h)(6)(ii) and 1926.1053(h)(4)(i)-(iv), (h)(6)(ii))				
a. Human Resources Manager Time and Cost to Provide Information to the PLHCP (Table 21)	443,154	110,711	\$7,650,892	–
4. PLHCP's Written Medical Opinion (§§ 1910.1053(h)(5)(i) and 1925.1053(h)(5)(i))				
a. Worker and Human Resources Manager Time and Cost to Provide the PLHCP's Written Medical Opinion to the Worker (Table 22)	443,154	35,452	\$2,449,978	–
5. Additional Medical Examinations (§§ 1910.1053(h)(6), (h)(6)(i) and (h)(6)(ii) and 1926.1053(h)(6), (h)(6)(i) and (h)(6)(ii).)				
a. Worker Time and Cost to Complete the Pulmonary Specialist Examination (Table 23)	467	742	\$21,545	–
b. Contract Cost for a PLHCP to Conduct Pulmonary Specialist Examination (Table 24)	–	–	–	\$88,861

Collection of Information Requirements (Item 2)	Number of Responses	Proposed Burden Hours (Item 12)	Proposed Burden Hour Cost (Item 12)	Proposed Operating and Maintenance Cost (Item 13)
F. Communication of Respirable Crystalline Silica Hazards to Employees (paragraph (i) of §§ 1910.1053 and 1926.1053)				
	0	0	–	–
G. Recordkeeping (paragraph (j) of §§ 1910.1053 and 1926.1053)				
1. Air Monitoring Data and Objective Data ((§§ 1910.1053(j)(1) & (j)(2) and 1926.1053(j)(1) & (j)(2))				
a. Human Resources Manager Time and Cost to Establish and Maintain Record for Exposure Monitoring Data (Table 25)	495,018	84,153	\$5,806,318	–
2. Objective Data (§§ 1910.1053(j)(2) and 1926.1053(j)(2))				
	0	0	–	–
3. Medical Surveillance ((§§ 1910.1053(j)(3) and 1926.1053(j)(3))				
a. Human Resources Manager Time and Cost to Establish and Maintain Record for Medical Surveillance (Table 26)	443,154	110,711	\$7,650,892	–
4. Disclosing Information During an Inspection	7,477	1,271	\$54,805	
TOTAL	4,242,296	2,585,164	\$99,777,182	\$273,504,281

