RESPIRABLE CRYSTALLINE SILICA STANDARDS FOR GENERAL INDUSTRY, SHIPYARD EMPLOYMENT AND MARITIME TERMINALS, AND CONSTRUCTION
1218-0266
May 2019

Note

OSHA has completed a regulatory review of its existing safety and health standards in response to the President's Executive Order 13563, "Improving Regulation and Regulatory Review" (76 FR 3821). This review, the Standards Improvement Project–Phase IV (SIP-IV), was the fourth in a series of rulemaking actions to improve and streamline OSHA standards. OSHA's Standards Improvement Projects remove or revise individual requirements in safety and health standards that are confusing, outdated, duplicative, or inconsistent. The goal of this rulemaking was to reduce regulatory burden while maintaining or enhancing worker safety and health.

As part of the SIP-IV rulemaking, OSHA removed the provisions in its standards that require employers to collect and record employees' social security numbers. This change will help protect employee privacy and aid in preventing identity fraud. The Silica standards for general industry and maritime, 29 CFR 1910.1053, and construction, 29 CFR 1926.1153, have been amended to reflect this change.

This ICR seeks OMB approval for changes to the collection in accordance with the SIP-IV Final Rule. As noted above and described in more detail in this ICR, the SIP-IV Final Rule is expected to reduce the paperwork burden borne by employers.
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SUPPORTING STATEMENT FOR THE INFORMATION COLLECTION REQUIREMENTS IN THE RESPIRABLE CRYSTALLINE SILICA STANDARDS FOR GENERAL INDUSTRY, SHIPYARD EMPLOYMENT AND MARITIME TERMINALS (29 CFR 1910.1053), AND CONSTRUCTION (29 CFR 1926.1153)[1] OMB CONTROL NO. 1218-0266 (May 2019)

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]

[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 as defined under the Paperwork Reduction Act (PRA) and its regulations (5 CFR 1320, *Controlling Paperwork Burdens on the Public*); this Supporting Statement does not provide information or guidance on how to comply with, or how to enforce, these provisions.

. . . 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).

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, OSHA is amending its existing standards for occupational exposure to respirable crystalline silica. OSHA has determined that employees exposed to respirable crystalline silica at the previous permissible exposure limits face a significant risk of material impairment to their health. The evidence in the record for this rulemaking indicates that workers exposed to respirable crystalline silica are at increased risk of developing silicosis and other non-malignant respiratory diseases, lung cancer, and kidney disease. The basis of this rulemaking is OSHA's determination that exposure to respirable crystalline silica poses significant risk to an estimated 2,312,261 affected employees (an estimated 514,812 employees above the action level) at an estimated 657,770 affected establishments.

The Silica Standards require a new permissible exposure limit of 50 micrograms of respirable crystalline silica per cubic meter of air (50 $\mu g/m^3$) as an 8-hour time-weighted average (referred to hereafter as "TWA" in all industries covered by the rule (referred to hereafter as "TWA"). The Standards also require an action level (AL) of 25 micrograms per cubic meter of air (25 $\mu g/m^3$), measured as a TWA. The general industry standard does not apply where the employer has objective data demonstrating that employee exposure to respirable crystalline silica will remain below 25 micrograms per cubic meter of air (25 $\mu g/m^3$) as an 8-hour time-weighted average (TWA) under any foreseeable conditions. The Standards also include other provisions to protect employees, such as requirements for exposure assessment, respiratory protection, written exposure control plans, medical surveillance, hazard communication, and recordkeeping, Items 2 and 12 below list and describe the specific collections of information in 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.

A. Exposure Assessment (§§ 1910.1053(d) and 1926.1153(d))

1. Exposure Assessment, General

Exposure Assessment, General (General Industry)

§ 1910.1053(d)(1) -- General. The employer shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level in accordance with either the performance option in paragraph (d)(2) or the scheduled monitoring option in paragraph (d)(3) of this section.

Alternative Exposure Control Methods - Exposure Assessment, General (Construction)

§ 1926.1153(d)(2)(i) – The employer shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level in accordance with either the performance option in paragraph (d)(2)(ii) or the scheduled monitoring option in paragraph (d)(2)(iii) of this section.

(Note: Paragraph (d)(2) of the construction standard covers exposure assessments for tasks not listed in Table 1, or where the employer does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1, as specified in paragraph (c)(1), Specified exposure control methods.)

Purpose: The purposes of requiring an assessment of employee exposures to respirable crystalline silica include: determination of the extent and degree of exposure at the worksite; identification and prevention of employee overexposure; identification of the sources of exposure; collection of exposure data so that the employer can select the proper control methods to be used; and evaluation of the effectiveness of those selected methods. Assessment enables employers to meet their legal obligation to ensure that their employees are not exposed in excess of the permissible exposure limit (PEL) and to ensure employees have access to accurate information about their exposure levels, as required by section 8(c)(3) of the Act, 29 U.S.C. 657(c)(3). In addition, exposure data enables the physicians or other licensed health care professionals (PLHCP) performing medical examinations to be informed of the extent of occupational exposures.

2. Exposure Assessment, Performance Option (General Industry /Maritime and Construction)

§§ 1910.1053(d)(2) and 1926.1153(d)(2)(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.

3. Exposure Assessment, Scheduled Monitoring Option

Exposure Assessment, Scheduled Monitoring Option (General Industry)

§ 1910.1053(d)(3)(i) -- The employer shall perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

§ 1910.1053(d)(3)(iii) -- Where the most recent exposure monitoring indicates that employee exposures are at or above the action level but at or below the PEL, the employer shall repeat such monitoring within six months of the most recent monitoring.

§ 1910.1053(d)(3)(iv) -- Where the most recent exposure monitoring indicates that employee exposures are above the PEL, the employer shall repeat such monitoring within three months of the most recent monitoring.

§ 1910.1053(d)(3)(v) -- Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the action level, the employer shall repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken 7 or more days apart, are below the action level, at which time the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring, except as otherwise provided in paragraph (d)(4) of this section.

Exposure Assessment, Scheduled Monitoring Option (Construction)

§ 1926.1153(d)(2)(iii)(A) -- Scheduled monitoring option. The employer shall perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

§ 1926.1153(d)(2)(iii)(C) -- Where the most recent exposure monitoring indicates that employee exposures are at or above the action level but at or below the PEL, the employer shall repeat such monitoring within six months of the most recent monitoring.

§ 1926.1153(d)(2)(iii)(D) -- Where the most recent exposure monitoring indicates that employee exposures are above the PEL, the employer shall repeat such monitoring within three months of the most recent monitoring.

§ 1926.1153(d)(2)(iii)(E) -- Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the action level, the employer shall repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken 7 or more days apart, are below the action level, at which time the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring, except as otherwise provided in paragraph (d)(2)(iv) of this section.

Purpose: The performance option is intended to allow employers flexibility in assessing the respirable crystalline silica exposures of their employees. Where the employer elects this option, the employer must conduct the exposure assessment prior to the time the work commences, and must demonstrate that employee exposures have been accurately characterized. To accurately characterize employee exposures under the performance option, the assessment must reflect the exposures of employees on each shift, for each job classification, in each work area. However, under this option, the employer has flexibility to determine how to achieve this. OSHA has not included specific criteria for implementing the performance option in the rule. Since the goal of the performance option is to give employers flexibility to accurately characterize employee exposures using whatever combination of air monitoring data or objective data are most appropriate for their circumstances, OSHA concludes it would be inconsistent to specify in the standard exactly how and when data should be collected. Where employers want a more structured approach for meeting their exposure assessment obligations, OSHA also provides the scheduled monitoring option.

4. Reassessment of Exposures (General Industry and Construction)

§§ 1910.1053(d)(4) and 1926.1153(d)(2)(iv) -- The employer shall reassess exposures 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, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.

Purpose: OSHA considers this reevaluation 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 employees, such as instituting additional engineering controls or providing appropriate respiratory protection. OSHA does not intend for employers to conduct additional monitoring simply because a change has been made, so long as the change is not reasonably expected to result in new or additional exposures to respirable crystalline silica at or above the action level.

5. Employee Notification of Assessment Results

Employee Notification of Assessment Results (General Industry)

§ 1910.1053(d)(6)(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.

§ 1910.1053(d)(6)(ii) -- Whenever an 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: The requirement to inform employees of the corrective actions the employer is taking to reduce the exposure level to or below the PEL is necessary to assure employees that the employer is making efforts to furnish them with a safe and healthful work environment, and is required under section 8(c)(3) of the OSH Act. 29 U.S.C. 657(c)(3). Also, notifying employees of their exposures provides them with knowledge that can permit and encourage them to be more proactive in working to control their own exposures through better and safer work practices and more active participation in safety programs. In addition, exposures to respirable crystalline silica below the PEL may still be hazardous, and making employees aware of such exposures may encourage them to take whatever steps they can, as individuals, to reduce their exposures as much as possible.

Employee Notification of Assessment Results (Construction)

§ 1926.1153(d)(2)(vi)(A) -- Within five working days after completing an exposure assessment in accordance with paragraph (d)(2) 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.

§ 1926.1153(d)(2)(vi)(B) - Whenever an 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: The shorter time period for notification provided in the standard for construction addresses the short duration of operations and employment that often occur in this industry sector. Also see purpose statement above for § 1910.1053(d)(6).

B. Signs

The general industry standard requires the employer to post signs at all entrances to regulated areas[2] that bear the legend specified in paragraph (j)(2). Although OSHA proposed a requirement for demarcating regulated areas, the Agency did not propose a requirement for warning signs at entrances to regulated areas, and instead noted that the areas could be effectively demarcated by signs, barricades, lines, or textured flooring.

§ 1910.1053(e)(2)(ii) -- The employer shall post signs at all entrances to regulated areas that bear the legend specified in paragraph (j)(2) of this section.

§ 1910.1053(j)(2) -- Signs. The employer shall post signs at all entrances to regulated areas that bear the following legend:

DANGER
RESPIRABLE CRYSTALLINE SILICA
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
WEAR RESPIRATORY PROTECTION IN THIS AREA
AUTHORIZED PERSONNEL ONLY

The standard provides specific language for the required signs. Therefore, the Agency is exempted from estimating the burden hours and costs of this provision under 5 CFR 1320.3(c)(2).

C. Written Exposure Control Plan

1. Establishing and Implementing the Written Exposure Control Plan

Establishing and Implementing the Written Exposure Control Plan (General Industry)

§ 1910.1053(f)(2)(i) -- The employer shall establish and implement a written exposure control plan that contains at least the following elements:

§ 1910.1053(f)(2)(i)(A) -- A description of the tasks in the workplace that involve exposure to respirable crystalline silica;

[2]Because the final general industry standard includes a sign requirement separate from the regulated areas requirements; the Agency did not include the discussion of those requirements in this ICR. (Note: OSHA did not include a requirement for regulated areas in the final standard for construction due to the fact that most construction employers are not expected to assess employee exposures, practical difficulties in establishing regulated areas for crystalline silica exposure in construction environments, and the addition of the requirement for a competent person to implement the written exposure control plan that is included in the construction standard).

§ 1910.1053(f)(2)(i)(B) -- A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task; and

§ 1910.1053(f)(2)(i)((C) -- A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica.

Establishing and Implementing the Written Exposure Control Plan (Construction)

§ 1926.1153(g)(1) -- The employer shall establish and implement a written exposure control plan that contains at least the following elements:

§ 1926.1153(g)(1)(i) -- A description of the tasks in the workplace that involve exposure to respirable crystalline silica;

§ 1926.1153(g)(1)(ii) -- A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;

§ 1926.1153(g)(1)(iii) -- A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and

§ 1926.1153(g)(1)(iv) -- A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.

Purpose: Even if exposures are below the PEL due to the use of engineering controls or work practices, a systematic approach for ensuring proper function of engineering controls and effective work practices is crucial for ensuring that those controls and practices remain effective. Thus, a written exposure control plan can prevent overexposures from occurring. Requiring employers to articulate conditions resulting in exposure and how those exposures will be controlled will help to ensure that they have a complete understanding of the controls needed to comply with the rule. A written exposure control plan also ensures that employers comprehensively and consistently protect their employees. Even in cases where employees are well trained, the written plan can help to ensure that controls are consistently used and become part of employees' routine skill sets. Employers could also use the plans to ensure that maintenance checks are routinely performed and optimal conditions are maintained. In addition, written exposure control plans are a useful method for communicating protections to employees.

Paragraph (f)(2)(i)(A) (paragraph (g)(1)(i)) of the standard for construction) requires a description of tasks involving exposures to respirable crystalline silica. It is important for

employers to consistently identify tasks resulting in exposure to ensure that appropriate employee protections are applied when needed.

The written exposure control plan must address controls, work practices, and respiratory protection used to manage exposures for each task (paragraph (f)(2)(i)(B) of the standard for general industry, (paragraph (g)(1)(ii) of the standard for construction) to ensure that exposures to respirable crystalline silica hazards are consistently controlled. Therefore, written exposure control plans must include information such as types of controls used (e.g., dust collector with manufacturer's recommended air flow and a filter with 99 percent efficiency), effective work practices (e.g., positioning local exhaust over the exposure source), and if required, appropriate respiratory protection (e.g., a respirator with an assigned protection factor (APF) of 10) for each task. The requirement is consistent with the exposure control plans in the ASTM standards that address implementation of engineering controls and work practices to reduce respirable crystalline silica exposures (Document ID 1466, p. 2; 1504, p. 2). It is also consistent with OSHA's Job Hazard Analysis approach, which is recommended by NIOSH as a model for the exposure control plan and calls for a description of controls (Document ID 2177, Attachment B, p. 16; OSHA document 3071, Revised 2002, Appendix 1 and 3).

Paragraph (f)(2)(i)(C) of the standard for general industry and maritime (paragraph (g)(1)(iii) of the l standard for construction) requires a description of housekeeping measures used to limit employee exposures to respirable crystalline silica. Housekeeping needs to be addressed in the written exposure control plan because cleaning accumulations of respirable crystalline silica dust from surfaces can help to reduce exposures. Also, it is important to ensure that employees are protected from respirable crystalline silica dust that can become airborne while performing housekeeping activities. Ensuring adequate and safe housekeeping methods helps to consistently control exposures and hazards related to respirable crystalline silica. Housekeeping is another type of work practice to be used to limit employee exposures, and thus, it is consistent with the written exposure control plans in the ASTM standards, which call for implementing work practices to decrease exposures (Document ID 1466, p. 2; 1504, p. 2). It is also consistent with OSHA's Job Hazard Analysis approach, which is recommended by NIOSH as a model for the exposure control plan and calls for a description of controls (Document ID 2177, Attachment B, pp. 16-17; OSHA document 3071, Revised 2002, Appendix 1 and 3).

Paragraph (g)(1)(iv) of the standard for construction requires a description of the procedures used to restrict access to work areas, when necessary, to limit the number of employees exposed and their exposure levels, including exposures generated by other employers or sole proprietors (i.e., self-employed individuals). Restricting access is necessary where respirator use is required under Table 1 or when an exposure assessment reveals that exposures are in excess of the PEL. The competent person[3], who is designated by the employer to implement the written exposure

[3] Note: Section (b) of the construction standard, "Definitions" indicates: "Competent person" means an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them. The competent person must have the knowledge and ability necessary to fulfill the responsibilities set forth in paragraph

control plan under paragraph (g)(4) of the standard for construction, could further identify situations where limiting access is necessary. For example, limiting access is necessary when an employer or sole proprietor exposes another company's employees to excessive respirable crystalline silica levels that cannot be controlled.

2. Reviewing, Evaluating, and Updating the Written Exposure Control Plan

§ 1910.1053(f)(2)(ii) and 1926.1153(g)(2) -- The employer shall review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.

Purpose: The written exposure control plan needs to be periodically reviewed and updated if needed because work conditions can change (e.g., the employer purchases a new type of equipment). A written exposure control plan will not likely need to be updated often because employees tend to use the same equipment to perform the same tasks at many locations. However, a yearly review is needed to ensure that all current scenarios are captured in the plan.

3. Availability of Written Exposure Control Plan

§§ 1910.1053(f)(2)(iii) and 1926.1153(g)(3) -- The employer shall make the written exposure control plan readily available for examination and copying, upon request, to each employee covered by this section, their designated representatives, the Assistant Secretary and the Director.

Purpose: A written exposure control plan is an effective method for communicating protections to employees and their designated representatives. Making the written plan available to employees and their designated representatives upon request empowers and protects employees by giving them and their representatives the information to question their employers if controls are not fully and properly implemented or maintained. Similarly, making written exposure control plans readily available to OSHA or NIOSH allows them the opportunity to verify effectiveness of employee protections.

Note: The Agency has determined that paragraph § 1910.1048(o)(6)(i) is no longer considered a collection of information for employers to make records available upon request to the Assistant Secretary. OSHA typically requests access to records during an inspection, and information collected by the Agency during the investigation is not subject to the PRA under 5 CFR 1320.4(a)(2). While NIOSH may use records collected from employers for research purposes, the Agency does not anticipate NIOSH to request employers to make available records during the approval period. Therefore, the burden for the employer to make this information available to NIOSH is zero.

D. Cross-reference to Subpart I

(g) of this section.

Two sections under subpart I Personal Protective Equipment contain collections of information, 29 CFR 1915.151, General Requirements and 1915.154, Respiratory Protection; the collections of information contained in these sections are approved by OMB in two separate ICRs titled Personal Protective Equipment (PPE) for Shipyard Employment (29 CFR part 1915, subpart I), OMB Control number 1218-0215 and Respiratory Protection Standard (29 CFR 1910.134) OMB Control number, 1218-099 respectively.

As noted in the ICR for the proposed rule, Subpart I, 29 CFR1915.151 includes collections of information related to hazard assessments, which state that 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 these hazard assessment collections under Items 12 and 13 of this Supporting Statement because the Agency does not anticipate new hazard assessments resulting from this standard. The Agency has already accounted for the existing hazard assessment collections of information in the Personal Protective Equipment (PPE) for Shipyard Employment (29 CFR part 1915, subpart I) ICR.

Subpart I also requires employers engaged in maritime work to comply with the general industry respirator standard at 29 CFR 1910.134. There are several collections of information required as part of the general industry respirator program requirements, and these are described and addressed below in Section E., "Respiratory Protection." As explained in Section E, OSHA is not taking additional burden hours or costs related to existing respirator use required by 29 CFR 1910.1053(f)(3) because the Agency has already accounted for those collections of information in Respiratory Protection Standard (29 CFR 1910.134), ICR. Costs for additional respirator use required by abrasive blaster helpers is addressed in Item 12 of this supporting statement, as noted in Section E.

E. Respiratory Protection (§§ 1910.1053(g) and 1926.1153(e))

1. §§ 1910.1053(g)(2) and 1926.1153(e)(2) -- Respiratory Protection Program.

§§ 1910.1053(g)(2) and 1926.1153(e)(2) -- Where respirator use is required by this section, the employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134.

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 collections of information are accounted for in section F of Item 12 of this Supporting Statement, "Medical Surveillance." Furthermore, the collections of information 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 Standards.

Purpose: The respiratory protection program will ensure that respirators are properly used in the workplace and are effective in protecting employees. The program must include: procedures for selecting respirators for use in the workplace; medical evaluation of employees required to use respirators; fit-testing procedures for tight-fitting respirators; procedures for proper use of respirators in routine and reasonably foreseeable emergency situations; procedures and schedules for maintaining respirators; procedures to ensure adequate quality, quantity, and flow of breathing air for atmosphere-supplying respirators; training of employees in respiratory hazards to which they might be exposed and the proper use of respirators; and procedures for evaluating the effectiveness of the program.

F. Medical Surveillance (§§ 1910.1053(i) and 1926.1153(h))

1. Medical Surveillance – General.

Medical Surveillance – General. (General Industry)

§ 1910.1053(i)(1)(i) -- The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be occupationally exposed to respirable crystalline silica at or above the action level for 30 or more days per year.[4]

Medical Surveillance – General. (Construction)

§ 1926.1153(h)(1)(i) -- The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be required under this section to use a respirator under this section for 30 or more days per year.

[4] Note: In the final rule for general industry, "Dates," paragraph (l)(4), provides that the medical surveillance obligations in paragraph (i)(1)(i) shall commence two years after the effective date of the rule for employees who will be occupationally exposed to respirable crystalline silica above the PEL for 30 or more days per year. Those obligations shall commence four years after the effective date of the rule for employees who will be occupationally exposed to respirable crystalline silica at or above the action level for 30 or more days per year.

Purpose: The purpose of medical surveillance for respirable crystalline silica is, where reasonably possible, 1) to determine if an employee can be exposed to respirable crystalline silica in his or her workplace without experiencing adverse health effects, or in other words, to determine if an employee has any condition, regardless of the cause, that might make him or her more sensitive to respirable crystalline silica exposure; 2) to identify respirable crystalline silica-related adverse health effects so that appropriate intervention measures can be taken; and 3) to determine the employee's fitness to use respirators. The inclusion of medical surveillance in this rule is consistent with Section 6(b)(7) of the Occupational Safety and Health (OSH) Act (29 U.S.C. 655(b)(7)) which requires that, where appropriate, medical surveillance programs be included in OSHA standards to determine whether the health of employees is adversely affected by exposure to the hazard addressed by the standard. Almost all other OSHA health standards have also included medical surveillance requirements.

The health effects of respirable crystalline silica are most likely to occur from repeated exposures and OSHA maintains that a trigger for exposure lasting 30-days is an administratively convenient trigger consistent with other OSHA standards and it is appropriate to exclude employees who are only exposed occasionally and less likely to experience adverse health effects. The 30-day trigger strikes a reasonable balance between including employees who are regularly exposed and excluding employees who are only occasionally exposed. It is consistent with OSHA standards for construction, including asbestos (29 CFR 1926.1101), cadmium (29 CFR 1926.1127), chromium (VI) (29 CFR 1926.1126), and lead (29 CFR 1926.62.)

2. Initial Medical Examination

§§ 1910.1053(i)(2) and 1926.1153(h)(2) -- 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:

§§ 1910.1053(i)(2)(i) and 1926.1153(h)(2)(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;

§§ 1910.1053(i)(2)(ii) and 1926.1153(h)(2)(ii) -- A physical examination with special emphasis on the respiratory system;

§§ 1910.1053(i)(2)(iii) and 1926.1153(h)(2)(iii) -- A chest X-ray (a single posteroanterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) or digital radiography systems), interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses by a NIOSH-certified B Reader;

§§ 1910.1053(i)(2)(iv) and 1926.1153(h)(2)(iv) -- A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV_1) and FEV_1/FVC ratio, administered by a spirometry technician with current certificate from a NIOSH-approved spirometry course;

§§ 1910.1053(i)(2)(v) and 1926.1153(h)(2)(v) -- Testing for latent tuberculosis infection; and

§§ 1910.1053(i)(2)(vi) and 1926.1153(h)(2)(vi) -- Any other tests deemed appropriate by the PLHCP.

Purpose: The requirement for an initial examination within 30 days of assignment provides a health baseline for future reference and lets employees know of any conditions that could increase their sensitivity to respirable crystalline silica exposure.

OSHA is requiring medical and work histories because they are efficient and inexpensive means for collecting information that can aid in identifying individuals who are at risk due to hazardous exposures. Recording of symptoms is important because, in some cases, symptoms indicating onset of disease can occur in the absence of abnormal laboratory test findings. In addition, aspects of the physical exam, such as visual inspection, palpation, tapping, and listening with a stethoscope, allow the PLHCP to detect abnormalities in chest shape or lung sounds that are associated with compromised lung function; also, the physical exam allows the employee to have a face-to-face interaction with the clinician to talk about symptoms or other concerns.

The proposed rule specified only film X-rays but would have allowed for an equivalent diagnostic study, such as digital X-rays; the Agency also sought comment on whether CT or HRCT scans should be considered equivalent diagnostic tests (78 FR 56469-56470). OSHA received many comments on the proposed provision, and in response to those comments, the current provision differs substantially from the proposal in two main ways. First, the rule now specifically allows for chest X-rays to be recorded on either film or digital radiography systems. Second, the rule does not allow for an "equivalent diagnostic study."

Pulmonary function testing (i.e., spirometry for this rule) is useful for obtaining information about the employee's lung capacity and expiratory flow rate and determining baseline lung function status upon which to assess any subsequent lung function changes. The test for latent tuberculosis infection (paragraph (i)(2)(v) of the standard for general industry and maritime, paragraph (h)(2)(v) of the standard for construction) is included because exposure to respirable crystalline silica increases the risk of a latent tuberculosis infection becoming active, even in workers who do not have silicosis. This places not only the employee, but also his or her coworkers at increased risk of acquiring this potentially fatal disease.

The provision for "any other tests," which remains unchanged from the proposal, gives the examining PLHCP the flexibility to determine additional tests deemed to be appropriate.

3. Periodic Medical Examination

Periodic Medical Examination (General Industry)

§ 1910.1053(i)(3) -- The employer shall make available medical examinations that include the procedures described in paragraph (i)(2) of this section (except paragraph (i)(2)(v)) at least every three years, or more frequently if recommended by the PLHCP.

Periodic Medical Examination (Construction)

§ 1926.1153(h)(3) -- 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: One of the main goals of periodic medical surveillance for employees exposed to respirable crystalline silica is to detect adverse health effects, such as silicosis and other non-malignant lung diseases, at an early stage so that interventions can be taken to improve health. Consistent with the NIOSH and ATS comments, OSHA finds that medical examinations offered at a frequency of at least every three years is appropriate for most employees exposed to respirable crystalline silica in light of the slow progression of most silica-related diseases. This decision is consistent with the ASTM standards (Section 4.6.5), which recommend that medical surveillance be conducted no less than every three years.

4. Information Provided to the PLHCP

§§ 1910.1053(i)(4) and 1926.1153(h)(4) -- The employer shall ensure that the examining PLHCP has a copy of this standard, and shall provide the PLHCP with the following information:

§§ 1910.1053(i)(4)(i) and 1926.1153(h)(4)(i) -- A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica;

§§ 1910.1053(i)(4)(ii) and 1926.1153(h)(4)(ii) -- The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica;

§§ 1910.1053(i)(4)(iii) and 1926.1153(h)(4)(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 or will use that equipment; and

§§ 1910.1053(i)(4)(iv) and 1926.1153(h)(4)(iv) -- Information from records of employment-related medical examinations previously provided to the employee and currently within the control of the employer.

Purpose: This information will aid the PLHCP in the evaluation of the employee's health in relation to assigned duties and fitness to use personal protective equipment. The information that the employer is to provide to the PLHCP, along with information collected as part of the exposure and work history, is relevant because it can assist the PLHCP in determining if symptoms or a health finding may be related to respirable crystalline silica exposure or the employee may be more sensitive to exposure. The information will also aid the PLHCP's evaluation of the employee's health in relation to recommended limitations on the employee's use of respirators or exposure to respirable crystalline silica.

5. PLHCP's Written Medical Report for the Employee

§§ 1910.1053(i)(5) and 1926.1153(h)(5) -- The employer shall ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed. The written report shall contain:

§§ 1910.1053(i)(5)(i) and 1926.1153(h)(5)(i) -- A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;

§§ 1910.1053(i)(5)(ii) and 1926.1153(h)(5)(ii) -- Any recommended limitations on the employee's use of respirators;

§§ 1910.1053(i)(5)(iii) and 1926.1153(h)(5)(iii) -- Any recommended limitations on the employee's exposure to respirable crystalline silica; and

§§ 1910.1053(i)(5)(iv) -- A statement that the employee should be examined by a specialist (pursuant to paragraph (i)(7) 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 specialist is otherwise deemed appropriate by the PLHCP.

§ 1926.1153(h)(5)(iv) -- A statement that the employee should be examined by a specialist (pursuant to paragraph (h)(7) 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 specialist is otherwise deemed appropriate by the PLHCP.

Note: To aid PLHCPs regarding compliance with the medical surveillance provisions of the Standards, a sample written medical report to provide to the employee is included in Appendix B.

Purpose: The requirements for the PLHCP's report for the employee are consistent with the overall goals of medical surveillance: to let the employee know if he or she can be exposed to respirable crystalline silica in his or her workplace without experiencing adverse health effects; to identify respirable crystalline silica-related adverse health effects so that appropriate intervention measures can be taken; and to determine the employee's fitness to use personal protective equipment, such as respirators. By providing the medical report to employees, those who might be at increased risk of health impairment from respirable crystalline silica exposure will be able to consider interventions, with guidance from the PLHCP. The requirement for a verbal explanation allows the employee to confidentially ask questions or discuss concerns with the PLHCP. The requirement for a written report ensures that the employee receives a record of all findings. In addition, giving the employee the written report will ensure the employee understands medical conditions that require follow-up and could affect decisions of where and how to work; also, employees would be able to provide the written report to future health care providers.

6. PLHCP's Written Medical Opinion for the Employer.

§§ 1910.1053(i)(6)(i) and 1926.1153(h)(6)(i) -- The employer shall obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:

§§ 1910.1053(i)(6)(i)(A) and 1926.1153(h)(6)(i)(A) -- The date of the examination;

§§ 1910.1053(i)(6)(i)(B) and 1926.1153(h)(6)(i)(B) -- A statement that the examination has met the requirements of this section; and

§§ 1910.1053(i)(6)(i)(C) and 1926.1153(h)(6)(i)(C) -- Any recommended limitations on the employee's use of respirators.

§§ 1910.1053(i)(6)(ii) and 1926.1153(h)(6)(ii) -- If the employee provides written authorization, the written opinion shall also contain either or both of the following:

§§ 1910.1053(i)(6)(ii)(A) and 1926.1153(h)(6)(ii)(A) -- Any recommended limitations on the employee's exposure to respirable crystalline silica;

§§ 1910.1053(i)(6)(ii)(B) -- A statement that the employee should be examined by a specialist (pursuant to paragraph (i)(7) 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 specialist is otherwise deemed appropriate by the PLHCP.

§ 1926.1153(h)(6)(ii)(B) -- A statement that the employee should be examined by a specialist (pursuant to paragraph (h)(7) 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 specialist is otherwise deemed appropriate by the PLHCP.

§ 1910.1053(i)(6)(iii) -- The employer shall ensure that each employee receives a copy of the written medical opinion described in paragraph (i)(6)(i) and (ii) of this section within 30 days of each medical examination performed.

§ 1926.1153(h)(6)(iii) -- The employer shall ensure that each employee receives a copy of the written medical opinion described in paragraph (h)(6)(i) and (ii) of this section within 30 days of each medical examination performed.

Note: The written authorization requirements in 1910.1053(i)(6)(ii) and 1926.1153(h)(6)(ii) are performance-oriented; no particular format is required to be obtained by the PLHCP. The Agency expects that the written authorization could easily be accomplished by the PLHCP through the use of a form that allows the employee to clarify what information the employee is authorizing to be released to the employer, by checking, initialing, or otherwise indicating which (if any) of these items the employee wishes to be included in the opinion to the employer. . A sample written authorization form and written medical opinion for the employer are included in Appendix B.

The burden hours and costs related to a PLHCP (or specialist) obtaining this written authorization from the employee is contained in the general medical examination and recordkeeping burden hours and costs in the Supporting Statement. The cost for the employer to make the PLHCP (or specialist) aware of the written authorization requirements of the Standards is included in the general cost to the employer to provide information to the PLHCP (or specialist).

Purpose: The date and statement about the examination meeting the requirements of this section are to provide both the employer and employee with evidence that requirements for medical surveillance are current. Employees would be able to show this opinion to future employers to demonstrate that they have received the medical examination. The Agency notes that the limitation on respirator use is consistent with information provided to the employer under the respiratory protection standard (29 CFR 1910.134).

OSHA is convinced that routinely including recommended limitations on respirable crystalline silica exposure and specialist referrals in written medical opinions provided to the employer could adversely affect employees' willingness to participate in medical surveillance. If an employee does not sign an authorization, then the employer will not know and cannot facilitate the referral to a Specialist and is not required to pay for the Specialist's examination. In the rare case where an employee is diagnosed with acute or accelerated silicosis, co-workers are likely to be at significant risk of developing those diseases as a result of inadequate controls in the workplace. In this case, the PLHCP and/or Specialist should explain this concern to the affected

employee and make a determined effort to obtain written authorization from the employee so that the PLHCP and/or Specialist can contact the employer.

7. Additional Examinations

§§ 1910.1053(i)(7)(i) and 1926.1153(h)(7)(i) -- If the PLHCP's written medical opinion indicates that an employee should be examined by a specialist, the employer shall make available a medical examination by a specialist within 30 days after receiving the PLHCP's written opinion.

Purpose: The requirement for examination by a specialist ensures that employees with abnormal findings can be given the opportunity to be seen by a professional with expertise in pulmonary disease or occupational medicine, who can provide not only expert medical judgment, but also counseling regarding work practices and personal habits that could affect these individuals' respiratory health. The Agency believes that the 30-day deadline will ensure that employees receive timely examinations.

Additional Examinations - Information Provided to the Specialist (General Industry)

§ 1910.1053(i)(7)(ii) -- The employer shall ensure that the examining specialist is provided with all of the information that the employer is obligated to provide to the PLHCP in accordance with paragraph (i)(4) of this section.

Additional Examinations - Information Provided to the Specialist (Construction)

§ 1926.1153(h)(7)(ii) -- The employer shall ensure that the examining 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 specialist with the same information that the employer provides to the original PLHCP. The reasons why the specialist should receive this information are the same as those for providing the information to the PLHCP. (See the purpose statement above for "Information Provided to the PLHCP.")

8. Additional Examinations - Specialist's Written Medical Report for the Employee

Additional Examinations - Specialist's Written Medical Report (General Industry)

§ 1910.1053(i)(7)(iii) -- The employer shall ensure that the specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination. The written report shall meet the requirements of paragraph (i)(5) (except paragraph (i)(5)(iv)) of this section.

Additional Examinations - Specialist's Written Medical Report (Construction)

§ 1926.1153(h)(7)(iii) -- The employer shall ensure that the specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination. The written report shall meet the requirements of paragraph (h)(5) (except paragraph (h)(5)(iv)) of this section.

Purpose: The reasons why the specialist is to give the employee this information is discussed above, under the requirements for the PLHCP's report. (See the purpose statement above for "PLHCP's Written Medical Report for the Employee.")

9. Additional Examinations - Specialist's Written Medical Opinion for the Employer

Additional Examinations - Specialist's Written Medical Opinion (General Industry)

§§ 1910.1053(i)(7)(iv) -- The employer shall obtain a written opinion from the specialist within 30 days of the medical examination. The written opinion shall meet the requirements of paragraph (i)(6) (except paragraph (i)(6)(i)(B) and (ii)(B)) of this section.

Additional Examinations - Specialist's Written Medical Opinion (Construction)

§ 1926.1153(h)(7)(iv) -- The employer shall obtain a written opinion from the specialist within 30 days of the medical examination. The written opinion shall meet the requirements of paragraph (h)(6) (except paragraph (h)(6)(i)(B) and (ii)(B)) of this section.

Purpose: The reasons why the specialist must provide this information to the employer are the same as those for the PLHCP and are addressed above. (See the purpose statement above for "PLHCP's Written Medical Opinion."

G. Communication of Respirable Crystalline Silica Hazards to Employees (§§ 1910.1053(j) and 1926.1153(i))

1. Hazard Communication

§§ 1910.1053(j)(1) and 1926.1153(i)(1) -- 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.

In the FEA the Agency notes that there is an existing OSHA PEL for respirable crystalline silica that covers the same group of employers, and an existing OSHA hazard communication standard (HCS) that covers all workplace exposures, including respirable crystalline silica. Accordingly,

the Agency already accounts for the burden hours and costs associated with HCS compliance by manufacturing establishments and non-manufacturing establishments handling products potentially containing respirable crystalline silica under the Information Collection Request (ICR) for the HCS, OMB Control No. 1218-0072. Under that ICR, the burden hours and costs for new and existing establishments include developing written hazard communication programs, classifying hazards, revising and sending labels, obtaining and maintaining Safety Data Sheets (SDSs), labeling shipping and in-plant containers, and employee access to written programs and SDSs.

Note: The NPRM, "Issues," indicated that 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." Classification of a chemical under the HCS triggers labeling requirements under that standard, and OSHA does not find it appropriate to impose different requirements in this rule. To do so would be at odds with the concept of harmonizing national and international requirements for classification and labelling of chemicals that is the basis of the GHS and HCS.

Note: For a discussion of § 1910.1053(j)(2) – Signs, see Item 2. B., "Signs" above.

2. Employee Information and Training

Employee Information and Training (General Industry)

§ 1910.1053(j)(3)(i) -- The employer shall ensure that each employee covered by this section can demonstrate knowledge and understanding of at least the following:

§ 1910.1053(j)(3)(i)(A) -- The health hazards associated with exposure to respirable crystalline silica;

§ 1910.1053(j)(3)(i)(B) -- Specific tasks in the workplace that could result in exposure to respirable crystalline silica;

§ 1910.1053(j)(3)(i)(C) -- Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;

§ 1910.1053(j)(3)(i)(D) -- The contents of this section; and

§ 1910.1053(j)(3)(i)(E) -- The purpose and a description of the medical surveillance program required by paragraph (i) of this section.

Employee Information and Training (Construction)

§ 1926.1153(i)(2)(i) -- The employer shall ensure that each employee covered by this section can demonstrate knowledge and understanding of at least the following:

§ 1926.1153(i)(2)(i)(A) -- The health hazards associated with exposure to respirable crystalline silica;

§ 1926.1153(i)(2)(i)(B) -- Specific tasks in the workplace that could result in exposure to respirable crystalline silica;

§ 1926.1153(i)(2)(i)(C) -- Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;

§ 1926.1153(i)(2)(i)(D) -- The contents of this section;

§ 1926.1153(i)(2)(i)(E) -- The identity of the competent person designated by the employer in accordance with paragraph (g)(4) of this section; and

§ 1926.1153(i)(2)(i)(F) -- The purpose and a description of the medical surveillance program required by paragraph (h) of this section.

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

3. Making a Copy of the Standard Available to Employees

§§ 1910.1053(j)(3)(ii) and 1926.1153(i)(2)(ii) -- The employer shall make a copy of this section readily available without cost to each employee covered by this section.

OSHA is taking no 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 5 CFR 1320.3(c)(2), this requirement does not fall within the definition of a collection of information because it is a public disclosure of information originally supplied by the Federal government to the employer for the purpose of disclosure.

H. Recordkeeping (§§ 1910.1053(k) and 1926.1153(j))

The Standards' recordkeeping requirements are 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. Air-Monitoring Data Records

Air-Monitoring Data Records (General Industry)

§ 1910.1053(k)(1)(i) -- The employer shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica, as prescribed in paragraph (d) of this section.

§ 1910.1053(k)(1)(ii) -- This record shall include at least the following information:

§ 1910.1053(k)(1)(ii)(A) -- The date of measurement for each sample taken;

§ 1910.1053(k)(1)(ii)(B) -- The task monitored;

§ 1910.1053(k)(1)(ii)(C) -- Sampling and analytical methods used;

§ 1910.1053(k)(1)(ii)(D) -- Number, duration, and results of samples taken;

§ 1910.1053(k)(1)(ii)(E) -- Identity of the laboratory that performed the analysis;

§ 1910.1053(k)(1)(ii)(F) -- Type of personal protective equipment, such as respirators, worn by the employees monitored; and

§ 1910.1053(k)(1)(ii)(G) -- Name and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.

Air-Monitoring Data Records (Construction)

§ 1926.1153(j)(1)(i) -- Air monitoring data. The employer shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica, as prescribed in paragraph (d)(2) of this section.

§ 1926.1153(j)(1)(ii) -- This record shall include at least the following information:

§ 1926.1153(j)(1)(A) -- The date of measurement for each sample taken;

§ 1926.1153(j)(1)(B) -- The task monitored;

§ 1926.1153(j)(1)(C) -- Sampling and analytical methods used;

§ 1926.1153(j)(1)(D) -- Number, duration, and results of samples taken;

§ 1926.1153(j)(1)(E) -- Identity of the laboratory that performed the analysis;

§ 1926.1153(j)(1)(F) -- Type of personal protective equipment, such as respirators, worn by the employees monitored; and

§ 1926.1153(j)(1)(G) -- Name 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. The records will allow interested parties to determine if existing controls are protecting workers or whether additional controls are necessary to provide the required protection. These records also allow OSHA to ascertain whether employers are complying with the Standards, thereby ensuring that workers are receiving adequate protection from 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). The additional requirement of the identity of the laboratory that performed the exposure analysis (as discussed in the preamble of the Notice of Proposed Rulemaking) is included because analysis of crystalline silica samples must conform with the requirements listed in the each standard (i.e., in Appendix A), and that can only be determined by knowing the identity of the laboratory that performed the analysis.

Air-Monitoring Data Records - Maintenance and Availability

§§ 1910.1053(k)(1)(iii) and 1926.1153(j)(1)(iii). The employer shall ensure that exposure records are maintained and made available in accordance with 29 CFR 1910.1020.

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.

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.

2. Objective Data Records

Objective Data Records (General Industry)

§ 1910.1053(k)(2)(i) -- The employer shall make and maintain an accurate record of all objective data relied upon to comply with the requirements of this section.

§ 1910.1053(k)(2)(ii) -- This record shall include at least the following information:

§ 1910.1053(k)(2)(ii)(A) -- The crystalline silica-containing material in question;

§ 1910.1053(k)(2)(ii)(B) -- The source of the objective data;

§ 1910.1053(k)(2)(ii)(C) -- The testing protocol and results of testing;

§ 1910.1053(k)(2)(ii)(D) -- A description of the process, task, or activity on which the objective data were based; and

§ 1910.1053(k)(2)(ii)(E) -- Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

Objective Data Records (Construction)

§ 1926.1153(j)(2)(i) -- The employer shall make and maintain an accurate record of all objective data relied upon to comply with the requirements of this section.

§ 1926.1153(j)(2)(ii) -- This record shall include at least the following information:

§ 1926.1153(j)(2)(ii)(A) -- The crystalline silica-containing material in question;

§ 1926.1153(j)(2)(ii)(B) -- The source of the objective data;

§ 1926.1153(j)(2)(ii)(C) -- The testing protocol and results of testing;

§ 1926.1153(j)(2)(ii)(D) -- A description of the process, task, or activity on which the objective data were based; and

§ 1926.1153(j)(2)(ii)(E) -- Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

Purpose: Since the rule allows objective data to be used to exempt the employer from monitoring requirements or to provide a basis for selection of respirators, OSHA considers it critical that the use of objective data be documented. As authorized in the rule, reliance on objective data is intended to provide the same degree of assurance that employer monitoring of employee exposures by taking air samples does. The specified content elements are required to ensure that the records are capable of demonstrating to OSHA a reasonable basis for the conclusions drawn by the employer from the objective data.

Objective Data Records – Maintenance and Availability

§§ 1910.1053(k)(2)(iii) and 1926.1153(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.)

3. Medical Surveillance Records

Medical Surveillance Records (General Industry)

§ 1910.1053(k)(3)(i) -- The employer shall make and maintain an accurate record for each employee covered by medical surveillance under paragraph (i) of this section.

§ 1910.1053(k)(3)(ii) -- The record shall include the following information about the employee:

§ 1910.1053(k)(3)(ii)(A) -- Name;

§ 1910.1053(k)(3)(ii)(B) -- A copy of the PLHCPs' and specialists' written medical opinions; and

§ 1910.1053(k)(3)(ii)(C) -- A copy of the information provided to the PLHCPs and specialists.

Medical Surveillance Records (Construction)

§ 1926.1153(j)(3)(i) -- The employer shall make and maintain an accurate record for each employee covered by medical surveillance under paragraph (h) of this section.

§ 1926.1153(j)(3)(ii) -- The record shall include the following information about the employee:

§ 1926.1153(j)(3)(ii)(A) -- Name;

§ 1926.1153(j)(3)(ii)(B) -- A copy of the PLHCPs' and specialists' written medical opinions; and

§ 1926.1153(j)(3)(ii)(C) -- A copy of the information provided to the PLHCPs and specialists.

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. 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.

Medical Surveillance Records - Maintenance and Availability

§§ 1910.1053(k)(3)(iii) and 1926.1153(j)(3)(iii). The employer shall ensure that medical records are maintained and made available in accordance with 29 CFR 1910.1020.[5]

[5] As noted in the final rule, pursuant to 29 CFR 1910.1020(d)(1)(i)(C), medical records of employees who have worked for less than one year for the employer need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment. This exception allows employers flexibility and the option not to retain medical records in these circumstances (53 FR 38140, 38153-38155 (9/29/88)). This provision greatly reduces the recordkeeping burden on employers of short-term employees, including many construction employees covered by this rule. Neither this rule nor 29 CFR 1910.1020 prohibits employers from keeping the medical records of employees who worked less than one year, and some employers may choose to keep the records. Employers have the option to keep records in electronic or paper form.

The employer is responsible for the maintenance of records in his or her possession (e.g., the written medical opinion described in paragraph (i)(6) of the standard for general industry and maritime (paragraph (h)(6) of the standard for construction)). The employer is also responsible for ensuring the retention of records in the possession of the PLHCP (e.g., the written medical report described in paragraph (i)(5) of the standard for general industry and maritime (paragraph (h)(5) of the standard for construction)) that are created pursuant to this rule's medical surveillance requirements. This responsibility, which derives from 29 CFR 1910.1020(b), means that

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.

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 paragraphs (k)(1)(iii) and (j)(1)(iii) in this section of this Supporting Statement.)

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 collection of information 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 collections of information in 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.

"Methods of compliance," Table 1 provides a list of construction tasks that expose workers to crystalline silica, as well as engineering and work-practice controls that reduce those exposures.

In the FEA, the Agency notes that it is offering various materials to assist employers in understanding and complying with the final rule. These include guidance materials such as fact sheets and other summary materials on the final rule; an OSHA dedicated silica webpage that will contain outreach and compliance assistance products; and, as required by Section 212 of the Small Business Regulatory Enforcement Fairness Act (SBREFA),[6] the release and dissemination

employers must ensure that the PLHCP retains a copy of medical records for the employee's duration of employment plus 30 years. The employer can generally fulfill this obligation by including the retention requirement in the agreement between the employer and the PLHCP.

[6] P.L. 104-121, March 29, 1996 (as amended by P.L. 110-28, May 25, 2007).

of a small business compliance guide to provide additional guidance and ease familiarization and compliance with the final rule.

OSHA understands that offering medical surveillance for a transient workforce may be challenging, especially for small companies. The requirement to offer medical examinations every three years reduces these costs and burdens considerably (see Chapter V of the Final Economic Analysis and Regulatory Flexibility Analysis).

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)(1) of the general industry standard, employers must inform workers, in writing or by posting, of the exposure-assessment results no later than 15 working days after completing the assessment. Under paragraph (d)(2)(vi)(A) of the construction standard, employers must inform workers, in writing or by posting, of the exposure-assessment results no later than 5 working days after completing the assessment. 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, paragraphs (k)(1)(iii), (k)(2)(iii) and (k)(3)(iii) of the general industry standard and (j)(1)(iii), (j)(2)(iii) and (j)(3)(iii) of the construction standard 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 has submitted a revised Respirable Crystalline Silica Standards for General Industry, Shipyard Employment and Marine Terminals (29 CFR 1910.1053) and Construction (29 CFR 1926.1153) Information Collection Request (ICR) to the Office of Management and Budget (OMB) for the Standards Improvement Project–Phase IV (SIP-IV) rulemaking.

OSHA sought public comment on revisions to this package when the Agency published the SIP-IV NPRM on October 4, 2016 (81 FR 68504). The Agency received no comments in response to this notice during the comment period for the NPRM.

This ICR seeks OMB approval for changes to the collection in accordance with the SIP-IV Final Rule, which is one of OSHA's Standards Improvement Projects. These projects review existing safety and health standards in response to Executive Order 13563, "Improving Regulation and Regulatory Review" (76 FR 3821). They are intended to improve and streamline OSHA standards by removing or revising requirements that are confusing or outdated, or that duplicate, or are inconsistent with, other standards. The goal of the SIP-IV Final Rule is to reduce regulatory burden while maintaining or enhancing worker safety and health.

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.

Since medical records contain information that may be considered private, OSHA has taken steps to ensure that the data are kept private to the extent allowed by law. Rules of Agency practice and procedure governing OSHA access to worker medical records are contained in 29 CFR 1913.10. The legal authority for these procedural regulations is found in sections 8(c)(1) and 8(g)(2) of the Occupational Safety and Health Act, 29 U.S.C. 657.

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.

This standard does not present questions to employers or others.

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

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

and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.

- **If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens.**

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

RESPONDENT BURDEN-HOUR AND COST BURDEN DETERMINATIONS

OSHA based these determinations on the Final Economic Analysis ("FEA") including the "Rulemaking Support for OSHA's Final Economic Analysis for the Proposed Respirable Crystalline Silica Standards, Excel Spreadsheets of Economic Costs and Impacts" prepared by the Eastern Research Group (ERG), which are available in the rulemaking docket.[7] The full explanation of these determinations is included in the FEA. Tables 1-28, referenced in this Supporting Statement, may be downloaded from www.reginfo.gov. These tables list the detailed data from the FEA and spreadsheets used to make these determinations. Table A, attached at the end of 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.

The format of this supporting statement generally follows the approach used in the FEA. One of the ways that the cost information in the FEA varies from that presented in the Preliminary Economic Analysis (PEA) is the inclusion of the hydraulic fracturing industry within the general industry estimates. In the PEA, hydraulic fracturing was considered separately from general industry in developing costs associated with provisions of the proposed rule. In the FEA, hydraulic fracturing is considered part of general industry, and these costs are now primarily combined. The only exceptions occur in provisions where the hydraulic fracturing industry was determined to have a different compliance rate than general industry for a provision (or activity within a provision). In these instances, hydraulic fracturing is noted separately from general industry in terms of costs. Also, like the proposal, maritime employment continues to be included in the general industry estimates. This standard affects 682,581 establishments total in both construction and general industry.

Wage Rates

The Agency obtained the wage rates, which are consistent with the wage rates used in the FEA, from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) publication, "National Occupational Employment and Wage Estimates, 2012."[8] The wage rates include an adjustment

[7]The rulemaking docket is available for public inspection and copying in the OSHA Docket Office and at *http://www.regulations.gov* (Docket Number: OSHA-2010-0034).

[8]See: http://www.bls.gov/oes/2012/may/oes_nat.htm.

for the average level of fringe benefits of 30.3%, as reported by BLS in "Employer Costs for Employee Compensation, December 2012."[9] The cost of labor used in these wage-rate determinations are, therefore, estimates of total hourly compensation.

Human Resources Manager

General Industry	$74.97
Construction	$74.26

Supervisor

General Industry	$40.38
Construction*	$44.04

Worker (Employee)

General Industry	$24.75
Construction	$31.63

* The FEA assumes the same wage rate for a "competent person" as the construction supervisor rate.

A. Exposure Assessment (§ 1910.1053(d)) and § 1926.1153(d)(2))

The Standards set forth requirements for assessing worker exposures to respirable crystalline silica. The general industry standard requires employers to assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level. The construction standard allows employers whose employees are engaged in a task identified on Table 1, to fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task on Table 1, unless the employer assesses and limits the exposure of the employee to respirable crystalline silica in accordance with paragraph (d) of this section. Employers may either follow a performance option (as specified in paragraph (d)(2)) of the general industry standard and paragraph (d)(2)(ii) of the construction standard or a scheduled monitoring option (as specified in paragraph (d)(3) of the general industry standard and paragraph (d)(2)(iii) of the construction standard). In the FEA, OSHA assumes no current compliance with the exposure assessment requirements.

1. Performance Option (paragraph (d)(2) of § 1910.1053 and (d)(2)(ii) of § 1926.1153)

The Standards require employers to 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.

[9]See: http://www.bls.gov/news.release/archives/ecec_03122013.pdf

For purposes of calculating the exposure-assessment burden hours and costs under the performance option, the Agency used the total number of covered workers exposed to silica at or above the action level (25 ug/m^3) to estimate 277,949 workers in general industry will undergo exposure assessments.[10] The FEA assumes that 1 percent of at-risk construction workers will undergo initial exposure assessment which equates to 22,125 workers. The FEA assumes that initial monitoring is undertaken for abrasive blasters and tunnel workers as is periodic monitoring for those workers exposed above the action level. OSHA interprets the exposure assessment under the performance option 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. The Agency estimates that, on average, there are four workers per work area; thus, approximately 25% of these workers (69,487 in general industry; 5,531 in construction) represent the number of initial exposure assessments. Accordingly, employers will collect a total of 75,018 initial exposure assessments from workers (69,487 + 5,531). 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: 69,487 (workers sampled in general industry) x .5 (hours of worker time) = **34,744 hours**
Cost: 34,744 burden hours x $24.75 = **$859,914**

Burden hours: 5,531 (workers sampled in construction) x .5 (hours of worker time) = **2,766 hours**
Cost: 2,766 burden hours x $31.63 = **$87,489**

Total burden hours: 34,744 + 2,766 = **37,510 hours**
Total cost: $859,914 + $87,489 = **$947,403**

2. Scheduled Monitoring Option and Reassessment of Exposures (paragraphs (d)(3) and (d)(4) of § 1910.1053 and (d)(2)(iii) and (d)(2)(iv) of § 1926.1153)

Under the scheduled monitoring option for general industry and construction, the employer must perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone (PBZ) air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. The FEA assumes that 10 percent of affected workers in the construction industry will undergo the same initial monitoring requirements. 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 must sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

Under the scheduled monitoring option, requirements for periodic monitoring depend on the

[10] Source: FEA, Table III-9.

results of initial monitoring. If the initial monitoring indicates that employee exposures are below the action level, no further monitoring is required. If the most recent exposure monitoring reveals employee exposures to be at or above the action level but at or below the PEL, the employer must repeat monitoring within six months of the most recent monitoring. If the most recent exposure monitoring reveals employee exposures to be above the PEL, the employer must repeat monitoring within three months of the most recent monitoring.

Under paragraph (d)(4) for the general industry/maritime standard (paragraph (d)(2)(iv) of the construction standard), employers must reassess exposures 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, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.

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 FEA.[11] For the general industry 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 31,206 workers in general/maritime industries are exposed above the PEL and will wear respirators.[12] The Agency also estimates that 110,388 workers in general/maritime industries are exposed at or above the action level but below the PEL. The Agency assumes that the employer will complete one representative, periodic exposure assessment for every four workers per work area. OSHA anticipates that most construction workers will choose to comply with Table 1 and avoid the costs of conducting exposure assessments, however, OSHA assumes that some may choose to conduct initial monitoring to determine their exposure levels to silica. Those employers who undergo initial monitoring will be required to conduct periodic monitoring for those employees determined to be exposed above the action level. Abrasive blasters and tunnel workers in the construction industry are not covered by Table 1, and these workers will undergo initial exposure assessments as well as any periodic monitoring required based on the resulting exposure levels (two times per year for workers exposed below the PEL and above the AL and four times per year for workers exposed above the PEL).Therefore, based on the FEA, OSHA estimates that approximately 12,482 construction workers will undergo periodic monitoring.

Also, OSHA estimates that approximately 25 percent of workers whose initial exposure or subsequent monitoring was at or above the action level would undergo additional monitoring paragraph (d)(4) of the general industry standard and paragraph (d)(2)(iv) of the construction standard to reassess exposure levels.

[11]Sources: FEA Table III-9 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.)

[12]In Chapter V of the FEA, “Costs of Compliance,” Table V-13 shows the number of workers using respirators in general industry, excluding abrasive blasters.

The burden hours and cost associated with these provisions are:

Burden hours: 110,388 workers in general industry at or above the action level but below the PEL) / 4 (workers per area) x 2 (assessments per year) x 1.25 (additional assessments) x .5 (hours of worker time) = **34,496 hours**
Cost: 34,496 burden hours x $24.75 = **$853,776**

Burden hours: 31,206 (respirator users in general industry exposed above the PEL) / 4 (workers per area) x 4 (assessments per year) x 1.25 (additional assessments) x .5 (hours of worker time) = **19,504 hours**
Cost: 19,504 burden hours x $24.75 = **$482,724**

Burden hours: 383 (workers in construction undergoing semi-annual sampling) / 4 (workers per area) x 2 assessments/year x 1.25 (additional assessments) x .5 (hours of worker time) = **120 hours**
Cost: 120 burden hours x $31.63 = **$3,796**

Burden hours: 12,099 (workers in construction undergoing quarterly sampling) / 4 (workers per area) x 4 assessments/year x 1.25 (additional assessments) x .5 (hours of worker time) = **7,562 hours**
Cost: 7,562 burden hours x $31.63 = **$239,186**

All Periodic and Additional Exposure Assessments Combined

Total Burden Hours: 34,496 + 19,504 + +120 + 7,562 = **61,682 hours**
Total Cost: $853, 776 + $482,724 + $3,796 + $239,186 = **$1,579,482**

3. Employee Notification of Assessment Results (paragraph (d)(6) of § 1910.1053 and (d)(2)(vi) of § 1926.1153)

The standards require the employer to individually notify each affected employee in writing of the results of any exposure assessment conducted in accordance with paragraph (d) of the general industry standard (paragraph (d)(2) of the construction standard) or post the results in an appropriate location accessible to all affected employees. In addition, whenever an 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.

The Agency estimates that a human resources manager takes on average 15 minutes to prepare and notify each worker of the results, either by posting or written notification. The following table summarizes the estimated number of exposure assessments to be conducted:

Exposure Assessments [13]	Initial	Periodic	Additional	Periodic and Additional
General Industry				
At or above AL	69,487	-	-	-
At or above AL and at or below PEL	-	55,194	13,799	68,993
Above PEL	-	31,206	7,802	39,008
Subtotal	69,487	86,400	21,601	108,001
Construction				
Workers undergoing Initial Assessment	5,531	-	-	-
Workers undergoing Periodic Assessment	-	12,290	3,073	15,363
Subtotal	5,531	12,290	3,073	15,363
Total	**75,018**	**98,690**	**24,673**	**123,364**

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

Burden hours: (69,487 initial assessments + 108,001 periodic and additional assessments in general industry) x .25 hours = **44,372 hours**
Cost: 44,372 hours x $74.97 (HR manager wage rate, general industry) = **$3,326,569**

Burden hours: (5,531 initial assessments + 15,363 periodic and additional assessments in construction) x .25 hours = **5,224 hours**
Cost: 5,224 hours x $74.26 (HR manager wage rate, construction) = **$387,934**

Total burden hours: 44,372 + 5,224 **= 49,596**
Total cost: $3,326,569 + $387,934 **= $3,714,503**

B. Written Exposure Control Plan (paragraph (f)(2) of 1910.1053 and paragraph (g) of 1926.1153)

Paragraph (f)(2) in the standard for general industry and paragraph (g) in standard for construction specify the following requirements for a written exposure control plan.[14] The

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

[14] The final rule does not include the proposed written access control plan requirement that construction employers could prepare in lieu of establishing regulated areas. However, as part of the new Written Exposure

employer must include the following elements in the plan: a description of the tasks in the workplace that involve exposure to respirable crystalline silica; a description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task; a description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and for construction, a description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.

For costing purposes, the Agency estimates that 682,243 affected establishments will require a written exposure control plan. Unit costs for a written exposure control plan were calculated based on establishment size, and the Agency assumed, for costing purposes, that a supervisor will develop and update the written exposure control plan for each establishment, spending 1 hour for establishments with fewer than 20 employees, 4 hours for those establishments with between 20 and 499 employees, and 16 hours for those establishments with 500 or more employees. OSHA estimated that 1 hour would be sufficient for very small establishments because there is, on average, barely more than 1 worker covered by the standard per very small establishment in general industry and maritime.

OSHA further determined that the additional supervisory time (or competent person time in construction) needed to review and evaluate the effectiveness of the plan, and to update it as necessary, will also vary by establishment size. OSHA estimated 0.5 hours for establishments with fewer than 20 employees, 2 hours for those with between 20 and 499 employees, and 8 hours for those with 500 or more employees to perform the annual review and update. The Agency expects that no other labor or materials will be required for general industry to implement the plan, so the sole cost for this provision is the time it will take to develop, review, and update the plan.

For construction work, the Agency assumes burden hours and costs related to the implementation of a written exposure control plan by a designated competent person. The competent person has two broad options to restrict access to work areas when necessary: notifying or briefing employees, or direct access control. While the requirements for the written exposure control plan are more performance-oriented and thus should provide more flexibility for employers and reduce the cost of compliance, OSHA has estimated the costs of these options using, where appropriate, comparable components of the regulated area and written access control plan costs estimated in the PEA.

For the employee notification or briefing option, OSHA estimated that, on average, it will take the competent person 15 minutes (0.25 hours) per job to revise the briefing plan, that each job will last 10 work-days, and that there are 150 construction working days in a year. OSHA further estimated that it will take the competent person 6 minutes (0.1 hours) to brief each at-risk crew

Control Plan requirement in the final rule, the FEA includes costs for written access control plans in construction.

member (where an at-risk crew member could be an employee, a contractor, a subcontractor, or other worker under the control of the competent person) and that each crew consists of 4 at-risk workers.

For the direct access control option, OSHA estimated that, on average, it will take the competent person 15 minutes (0.25 hours) per job to revise the plan concerning direct access control and, again, that each job will last 10 work-days and that there are 150 construction working days in a year. Thus, OSHA estimates that, on average, each employer would implement a direct access control 15 times per year over a total of 3.75 hours per year.

OSHA assumed that, in restricting access, half the time employers would use the briefing option and the other half of the time they would use direct access control. This results in .30 hours of the supervisor's time to implement the exposure control plan per job. OSHA assumes each job will last 10 work-days and that there are 150 construction working days in a year, for a total of 15 jobs per year[15].

Development of Written Exposure Control Plans

Burden hours: 51,949 written exposure control plans in small general industry establishments x 1 (hour of supervisor time to develop written plan) = **51,949 hours**
Cost: 51,949 x $40.38 = **$2,097,701**

Burden hours: 23,933 written exposure control plans in medium general industry establishments x 4 (hours of supervisor time to develop written plan) = **95,732 hours**
Cost: 95,732 x $40.38 = **$3,865,658**

Burden hours: 641 written exposure control plans in large general industry establishments x 16 (hours of supervisor time to develop written plan) = **10,256 hours**
Cost: 10,256 x $40.38 = **$414,137**

Burden hours: 545,417 written exposure control plans in small construction establishments x 1 (hours of competent person time to develop written plan) = **545,417 hours**
Cost: 545,417 x $44.04 = **$24,020,165**

[15] The PEA included .1 hour of plan implementation time to communicate the plan to workers. In the FEA, this time is incorporated to the time to develop the plan for general industry, and it is considered part of the implementation time by a competent person in the construction industry.

Burden hours: 59,743 written exposure control plans in medium construction establishments x 4 (hours of competent person time to develop written plan) = **238,972 hours**
Cost: 238,972 x $44.04 = **$10,524,327**

Burden hours: 560 written exposure control plans in large construction establishments x 16 (hours of competent person time to develop written plan) = **8,960 hours**
Cost: 8,960 x $44.04 = **$394,598**

Total Burden Hours: 51,949 + 95,732 + 10,256 + 545,417 + 238,972 +8,960 **= 951,286**
Total Cost: $2,097,701+ $3,865,658+ $414,137 + $24,020,165 + $10,524,327 + $394,598 **= $41,316,586**

Review and Update of Written Exposure Control Plans

Burden hours: 51,949 written exposure control plans in small general industry establishments x 0.5 (hours of supervisor time to revise and update written plan) = **25,975 hours**
Cost: 25,975 x $40.38 = **$1,048,871**

Burden hours: 23,933 written exposure control plans in medium general industry establishments x 2 (hours of supervisor time to revise and update written plan) = **47,866 hours**
Cost: 47,866 x $40.38 = **$1,932,829**

Burden hours: 641 written exposure control plans in large general industry establishments x 8 (hours of supervisor time to revise and update written plan) = **5,128 hours**
Cost: 5,128 x $40.38 = **$207,069**

Burden hours: 545,417 written exposure control plans in small construction establishments x 0.5 (hours of competent person time to revise and update written plan) = **272,709 hours**
Cost: 272,709 x $44.04 = **$12,010,104**

Burden hours: 59,743 written exposure control plans in medium construction establishments x 2 (hours of competent person time to revise and update written plan) = **119,486 hours**
Cost: 119,486 x $44.04 = **$5,262,163**

Burden hours: 560 written exposure control plans in large construction establishments x 8 (hours of competent person time to revise and update written plan) = **4,480 hours**
Cost: 4,480 x $44.04 = **$197,299**

Total Burden Hours: 25,975 + 47,866 + 5,128 + 272,709 + 119,486 + 4,480 **= 475,644**
Total Cost: $1,048,871 + $1,932,829 + $207,069 + $12,010,104 + $5,262,163 + $197,299 **= $20,658,335**

Implementation of Written Access Control Plan (construction only)

Burden hours: 545,417 written exposure control plans in small construction establishments x 0.3 (hours of competent person time to implement written plan) x 15 (jobs per year) = **2,454,377 hours**
Cost: 2,454,377 x $44.04 = **$108,090,763**

Burden hours: 59,743 written exposure control plans in medium construction establishments x 0.3 (hours of competent person time to implement written plan) x 15 (jobs per year) = **268,844 hours**
Cost: 268,844 x $44.04 = **$11,839,890**

Burden hours: 560 written exposure control plans in large construction establishments x 0.3 (hours of competent person time to implement written plan) x 15 (jobs per year) = **2,520 hours**
Cost: 2,520 x $44.04 = **$110,981**

Total Burden hours: 2,454,377 + 268,844 + 2,520 **= 2,725,741**
Total Cost: $108,090,763 + $11,839,890 + $110,981**= $120,041,634**

For purposes of calculating PRA burden hours and costs, OSHA assumes supervisor time to make the written plan available to employees and designated representatives under §§ 1910.1053(f)(2)(iii) and 1926.1153(g)(3).

Making Written Exposure Control Plans Available (§§ 1910.1053(f)(2)(iii) and 1926.1153(g)(3))

Burden hours: 152,263 employees in general industry establishments x 10% x .08 (hours of supervisor time to make written plan available) = **1,218 hours**
Cost: 1, 218 x $40.38 = **$49,183**

Burden hours: 1,096,986 employees in construction establishments x 10% x .08 (hours of supervisor time to make written plan available) = **8,776 hours**
Cost: 8,776 x $44.04 = **$386,495**

Total Burden hours: 1,218 + 8,776 = 9,994
Total Cost: $49,183 + $386,495 =$435,678

C. Air Quality Permit Notification

The Agency received comments suggesting that foundries and other manufacturing plants would be required by the Environmental Protection Agency (EPA), or other federal or state environmental authorities, to incur an administrative cost to ensure their systems are compliant with relevant EPA regulations. In the FEA, the Agency recognizes that there will be minor incremental costs for notifying environmental authorities.

To allow for adequate administrative time for creating and submitting the notification, at those facilities that could potentially incur costs, OSHA allocated 20 hours to establishments with 20 to 499 employees and 40 hours to establishments with 500 or more employees. A manager's loaded hourly wage rate of $74.97 was applied to estimate the cost to employers (BLS, 2012b). The costs per establishment were estimated at approximately $1,500 per medium establishment and $3,000 per large establishment. Because both new permit applications and permit modifications are minor administrative chores, OSHA's cost estimates are sufficient to cover either case.

Burden hours: 15,960 affected establishments in small/medium general industry x 20 (hours of HR manager time to create and submit permit) = **319,200 hours**
Cost: **319,200** burden hours x $74.97 = **$23,930,424**

Burden hours: 575 affected establishments in general industry x 40 (hours of HR manager time to create and submit permit) = **23,000 hours**
Cost: **23,000** burden hours x $74.97 = **$1,724,310**

Total Burden hours: 319,200 + 23,000 = 342,200
Total cost: $23,930,424 + $1,724,310= $25,654,734

D. Respiratory Protection (§§ 1910.1053(g) and 1926.1153(e))

Paragraph (g) of the standard for general industry (paragraph (e) of the standard for construction) establishes requirements for the use of respiratory protection, to which OSHA's respiratory

protection standard (29 CFR 1910.134) also applies.[16] Specifically, respirators are required under the rule: where exposures exceed the PEL during periods necessary to install or implement engineering and work practice controls; where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible; and during tasks for which all feasible engineering and work practice controls have been implemented but are not sufficient to reduce exposure to or below the PEL.

The standard for general industry and maritime also requires respiratory protection during periods when an employee is in a regulated area. The standard for construction also requires respiratory protection where specified by Table 1 of paragraph (c), but does not include a requirement to establish a regulated area, and thus does not contain a provision requiring the use of respirators in regulated areas.

Whenever employers use respirators to comply with the requirements of the Standards, paragraph (g)(2) in the general industry (paragraph (e)(2) of the 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 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 new PEL is abrasive blasting. Abrasive blasting operators**,** but not abrasive blasting helpers, are already required to use respirators under existing OSHA standard. The Agency, therefore, has added respirator costs for abrasive blaster helpers in maritime (half of all the abrasive blaster workers) as a result of this final rule.

1. Respiratory Protection Program §§ 1910.1053(g)(2) and 1910.1153(e)(2))

Establishing New Respiratory Protection Programs

In general industry, the Agency estimates there are 6,038 small and medium-sized establishments with respirator users outside of the hydraulic fracturing industry, and 3,019 of those

[16] 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.

establishments with respirator users needing a new program (50% of 6,038). The Agency also estimates there are 209 large establishments with respirator users in general industry (excluding hydraulic fracturing), of which there are 105 large establishments (500 or more workers) with respirator users needing a new program (50% of 209).[17,18] In construction, the Agency estimates there are 82,993 small and medium-sized establishments with respirator users, and 36,517 of those establishments with respirator users needing a new program (44% of 82,993).[19] The Agency also estimates there are 3,994 large establishments with respirator users in construction, of which there are 1,757 large establishments with respirator users needing a new program (44% of 3,994).[20,21]

In hydraulic fracturing, the Agency estimates there are 430 small-sized establishments with respirator users, and 129 of those establishments need a new program (30% of 430); 2,587 medium-sized establishments with respirator users, and 517 of those establishments need a new program (20% of 2,587); and zero large establishments with respirator users, therefore no large establishments need a new program (5% of 0).[22]

Employers will incur a cost burden to establish a respirator programs. The Agency projects that this expense will involve an initial 8 hours for large establishments, and 4 hours for all other firms. The Agency assumes that a human 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: 209 (large general industry establishments with respirator users) x .5 (compliance rate) x 8 (hours of human resource manager time to establish new program) = **840 hours**
Cost: 840 burden hours x $74.97 = **$62,975**

Burden hours: 6,038 (all other general industry establishments with respirator users) x .5 (compliance rate) x 4 (hours of human resources manager time to establish new program) = **12,076 hours**
Cost: 12,076 burden hours x $74.97= **$905,338**

[17] The Agency estimates a total of 6,247 establishments with respirator users in general industry.

[18] Table V-13 of the FEA and ERG's supporting spreadsheet, "Silica Program Costs," "GI Respirators" indicate the number of respirator users and establishments in general industry.

[19] OSHA's derivation of the 56 percent current compliance rate in construction, in the context of the final silica rule, is described in Chapter V in the FEA.

[20] The Agency estimates a total of 86,987 establishments with respirator users in construction.

[21] Table V-60 and ERG's supporting spreadsheet, "Construction," "Respirator Unit Costs," indicate the number of respirator users in construction.

[22] ERG's supporting spreadsheet, "Silica Program Costs," "GI Respirators," indicates the number of respirator users and establishments in hydraulic fracturing.

Total Burden hours: 840 + 12,076 = **12,916 hours**
Total Cost: $62,975+ $905,338 = **$968,313**

Establish New Programs in Construction:

Burden hours: 3,994 (large construction establishments with respirator users) x (1 -.56) (compliance rate) x 8 (hours of human resource manager time to establish new program) = **14,056 hours**
Cost: 14,056 burden hours x $74.26 = **$1,043,799**

Burden hours: 82,993 (all other construction establishments with respirator users) x (1 -.56) (compliance rate) x 4 (hours of human resources manager time to establish new program) = **146,068 hours**
Cost: 146,068 burden hours x $74.26 = **$10,847,010**

Total burden hours: 14,056 + 146,068 = **160,124 hours**
Total cost: $1,043,799+ $10,847,010 = **$11,890,809**

Establish New Programs in Hydraulic Fracturing:

Burden hours: 0 (large hydraulic fracturing establishments with respirator users) x (1- .95) (compliance rate) x 8 (hours of human resource manager time to establish new program) = **0 hours**
Cost: 0 burden hours x $74.97 = **$0**

Burden hours: 2,587 (medium hydraulic fracturing establishments with respirator users) x (1 -.80) (compliance rate) x 4 (hours of human resources manager time to establish new program) = **2,070 hours**
Cost: 2,070 burden hours x $74.97 = **$155,188**

Burden hours: 430 (small hydraulic fracturing establishments with respirator users) x (1 - .70) (compliance rate) x 4 (hours of human resources manager time to establish new program) = **516 hours**
Cost: 516 burden hours x $74.97 = **$38,685**

Total Burden hours: 0 + 2,070 + 516 = **2,586 hours**
Total cost: $0 + $155,188 + $38,685 = **$193,873**

Establish New Programs in All Industries Combined:

Total burden hours: 12,916 + 160,124 + 2,586 = **175,626 hours**
Total cost: $968,313 + $11,890,809+ $193,873 = **$13,052,995**

Revise Existing Programs

After the first year, OSHA estimates that 20 percent of all establishments who established a program would revise their program every year. Large establishments will expend 4 hours for a program revision, and all other employers will expend two hours for a program revision.

Revise Existing Programs in General Industry

Burden hours: 209 (large general industry establishments with respirator users) x .5 (compliance rate) x .2 (percent of establishments updating program x 4 (hours of human resource manager time to revise the existing program) = **84 hours**
Cost: 84 burden hours x $74.97 = $6,297

Burden hours: 6,038 (all other general industry establishments with respirator users) x .5 (compliance rate) x .2 (percent of establishments updating program) x 2 (hours of human resource manager time to revise the existing program) = 1,208 **hours**
Cost: 1,208 burden hours x $74.97= **$90,564**

Total Burden hours: 84 + 1,208 = **1,292 hours**
Total cost: $6,297+ $90,564 = **$96,861**

Revise Existing Programs in Construction:

Burden hours: 3,994 (large construction establishments with respirator users) x (1 -.56) (compliance rate) x .2 (percent of establishments updating program) x 4 (hours of human resource manager time to revise the existing program) = **1,404 hours**
Cost: 1,404 burden hours x $74.26 = **$104,261**

Burden hours: 82,993 (all other construction establishments with respirator users) x (1 -.56) (compliance rate) x .2 (percent of establishments updating program) x 2 (hours of human resources manager time to revise the existing program) = **14,606 hours**
Cost: 14,606 burden hours x $74.26 = **$1,084,642**

Total Burden hours: 1,404 + 14,606 = **16,010 hours**
Total cost: $104,261+ $1,084,642 = **$1,188,903**

Revise Existing Programs in Hydraulic Fracturing:

Burden hours: 0 (large hydraulic fracturing establishments with respirator users) x (1- .95) (compliance rate) x .2 (percent of establishments updating program) x 4 (hours of human resource manager time to revise the existing program) = **0 hours**
Cost: 0 burden hours x $74.97 = **$0**

Burden hours: 2,587 (medium hydraulic fracturing establishments with respirator users) x (1 -.80) (compliance rate) x .2 (percent of establishments updating program) x 2 (hours of human resources manager time to revise the existing program) = **206 hours**
Cost: 206 burden hours x $74.97 = **$15,444**

Burden hours: 430 (small hydraulic fracturing establishments with respirator users) x (1 - .70) (compliance rate) x .2 (percent of establishments updating program) x 2 (hours of human resources manager time to revise the existing program) = **52 hours**
Cost: 52 burden hours x $74.97 = **$3,898**

Total burden hours: 0 + 206 + 52 = **285 hours**
Total cost: $0 + $15,444 + $3,898 = **$19,342**

Revise Existing Programs in All Industries Combined:

Total burden hours: 1,292 + 16,010 + 285 = **17,560 hours**
Total cost: $96,861 + $1,188,903+ $19,342 = **$1,305,106**

2. Respiratory Protection Program: Fit-Testing for Respirator Use (§§ 1910.1053(g)(2) and 1926.1153(e)(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 31,206 respirator users in general industry[23] and 264,761 in construction that will require fit tests.[24] The Agency estimates that each worker takes 1 hour to complete a fit test, including recordkeeping, in-house, and supervisors will conduct the fit-testing for workers in groups of 4 (.25 hours of supervisor time per worker). The annual burden hours and cost associated with fit testing are:

Burden hours: 31,206 (fit tests) x 1 (hours of worker time, general industry) = **31,206 hours**
Cost: 31,206 hours x $24.75 = **$772,349**

Burden hours: 31,206 (fit tests) x .25 (hours of supervisor time, general industry) = **7,802 hours**
Cost: 7,802 hours x $40.38 = **$315,045**

Burden hours: 264,761 (fit tests) x 1 (hours of worker time, construction) = 264,761 **hours**
Cost: 264,761 hours x $31.63 = **$8,374,390**

Burden hours: 264,761 (fit tests) x .25 (hours of supervisor time, construction) = **66,190 hours**
Cost: 66,190 hours x $44.04= **$2,915,008**

Total burden hours: **31,206 + 7,802 + 264,761 + 66,190 = 369,959 hours**
Total cost: $772,349 + $315,045 + $8,374,390 + $2,915,008 = $12,376,792

3. Respiratory Protection Program: Establishing and Maintaining Respirator Fit Testing Records (§§ 1910.1053(g)(2) and 1926.1153(e)(2))

[23]Table V-13 of the FEA shows the number of workers using respirators in general industry, 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.

[24]Table V-60 of the FEA shows the number of respirator users in construction, which includes abrasive blasters wearing respirators above the PEL, is 264,761. However, ERG's cost assumptions for respiratory protection exclude 11,640 abrasive blasters because they must already wear respirators under other OSHA standards. Subtracting the abrasive blasters leaves a total of 253,121 respirator users in construction. Thus, this Supporting Statement relies on the number of users consistent with the cost assumptions (see: ERG spreadsheet, "Inputs_FEA").

In the FEA, costs for establishing and maintaining fit test records are included in the respirator fit test costs presented above in "2. Respiratory Protection Program".

E. Medical Surveillance (§§ 1910.1053(i) and 1926.1153(h))

Employers must make medical examinations available at no cost, and at a reasonable time and place, for exposed workers meeting the appropriate trigger point in each standard. In addition, employers ensure 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 health screening requirements. The following paragraphs describe the specific medical examinations in detail.

1. Initial Examination (§§ 1910.1053(i)(2)(i)-(vi) and 1926.1153(h)(2)(i)-(vi))

In general industry, the FEA assumes that employers will make available medical surveillance (i.e., medical examinations) to workers who receive occupational exposure to respirable crystalline silica at or above the action level for 30 or more days a year.[25] In construction, the FEA assumes that employers must make available medical surveillance to workers wearing a respirator for 30 or more days per 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(i)(2) and 1926.1153(h)(2)). The content of the initial medical examinations is described by §§ 1910.1053(i)(2)(i)-(vi) and 1926.1153(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. This Supporting Statement assumes burden hours and costs for employers to provide these medical examinations during the first year that medical surveillance is required for each industry, with subsequent periodic medical examinations for these workers described in the paragraphs of this section, below.

Tables V-16 and V-63 of the FEA, 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,

[25] Implementation of the action level trigger is staggered so that it is not implemented until four years after the effective date. At two through four years after the effective date, the PEL will be the trigger for medical surveillance in general industry and maritime. (See: Final Rule, 29 CFR 1910.1053(l)(4), "Dates.")) The medical examination costs in the FEA may be overestimates because OSHA assumed immediate implementation of the rule (with no phase-in of the rule's provisions).

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 and 40% of new workers in construction will require initial medical examinations.[26] Therefore, for purposes of calculating medical surveillance costs, OSHA estimates that 412,175 existing workers (141,594 workers in general industry and 270,581 workers in construction) at or above the action level will require initial medical examinations.[27] To estimate the number of new workers, OSHA assumes a separation rate (layoffs, quits, and retirements) of 25% in general industry and 70% in construction.[28] Based on these assumptions, a total of 102,636 new workers (26,549 in general industry and 76,087 in construction) 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 medical and work history (including the medical questionnaire for respirator use); a physical examination (including a follow-up medical examination for respirator use, if needed); a chest x-ray; a pulmonary function test; a latent TB test; and other tests deemed appropriate by the PLHCP[29]. The estimated travel time for workers to travel off-site for the initial medical examination is 1 hour for general industry and 1.5 hours for construction.[30] The detailed burden hours and cost associated with the initial medical examination provision are available in Tables 13 and 14 in the attachments to this Supporting Statement.

Burden hours (existing workers, Table 13): **1,047,836 hours**
Cost (existing workers, Table 13): **$30,826,323**

Burden hours (new workers, Table 14): **289,452 hours**
Cost (new workers, Table 14): **$8,684,549**

[26] Source for % of new hires tested in initial year: FEA Tables V-16 and V-63 and ERG spreadsheet "Silica Program Costs," "Medical Surveillance."

[27] Source: FEA Tables V-17 and V-64 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.

[28] Source for separations rate: FEA Tables V-16 and V-63 and ERG spreadsheet "Silica Program Costs," "Medical Surveillance."

[29] The exam time and resulting costs includes the time for the PLHCP to provide their report to the worker and opinion to the employer.

[30] The Agency based the difference in travel times on the assumption that construction establishments are more geographically dispersed than general industry establishments.

Additionally, Tables 16 and 17 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 latent 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; estimated travel time is 1 hour for general industry and 1.5 hours for construction workers.

Burden hours (existing workers, Table 16): **256,459 hours**
Cost (existing workers, Table 16): **$7,665,473**

Burden hours (new workers, Table 17): **92,386 hours**
Cost (new workers, Table 17): **$2,802,066**

2. Periodic Medical Examination (§§ 1910.1053(i)(3) and 1926.1153(h)(3))

Under §§ 1910.1053(i)(3) and 1926.1153(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 continue to meet the trigger for medical surveillance. The content of the periodic medical examinations is identical to the requirements of paragraph (i)(2) of the standard for general industry (paragraph (h)(2) of the standard for construction), with the exception that testing for latent tuberculosis (paragraph (i)(2)(v) of the standard for general industry and paragraph (h)(2)(v) of the standard for construction) is not required for periodic testing.

OSHA estimates that a worker will take 2 hours to complete the periodic medical examination, consisting of: a medical and work history; a physical examination; a chest x-ray; a pulmonary-function test; and other tests deemed appropriate by the PLHCP, including a latent TB test, if recommended[31]. The estimated travel time for workers to travel off-site for the initial medical examination is 1 hour for general industry and 1.5 hours for construction. The detailed burden hours and cost associated with the periodic medical examination provisions are available in Table 19 and 20 in the attachments to this Supporting Statement.

Additionally, Table 21 in the attachments to this Supporting Statement shows the burden hours and costs associated with workers recommended for latent 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 industry[32] and 20% of workers in construction will be provided these tests[33].

Periodic Medical Examination[34]

[31] The exam time and resulting costs includes the time for the PLHCP to provide their opinion to the worker.

[32] See: FEA, Table V-16.

[33] See: FEA, Table V-63.

[34] The burden hours and costs presented for periodic medical exams represent all medical examinations in

Burden hours: 146,489 (periodic onsite examinations, general industry) x 2 (hours of worker time for onsite examination) = **292,978 hours**
Cost: 292,978 hours x $24.75 = **$7,251,206**

Burden hours: 97,602 (periodic offsite examinations, general industry) x (2 (hours of worker time for offsite examination) + 1 (hour of worker travel time for exam)) = **292,806 hours**
Cost: **292,806** hours x $24.75 = **$7,246,949**

Burden hours: 245,895 (periodic onsite examinations, construction industry) x 2 (hours of worker time for onsite examination) = **491,790 hours**
Cost: 491,790 hours x $31.63 = **$15,555,318**

Burden hours: 201,263 (periodic offsite examinations, construction industry) x (2 (hours of worker time for offsite examination) + 1.5 (hours of worker travel time for exam)) = **704,421 hours**
Cost: 704,421 hours x $31.63 = **$22,280,836**

Total burden hours: 292,978 + 292,806 + 491,790 + 704,421 = **1,781,995 hours**
Total cost: $7,251,206 + $7,246,949 + $15,555,318 + $22,280,836 **= $52,334,309**

TB testing During Periodic Medical Examination

Burden hours: 7,085 (onsite TB tests during periodic medical examination, general industry) x .08 (hours of worker time for return reading) = **567 hours**
Cost: 567 hours x $24.75 = **$14,033**

Burden hours: 4,308 (offsite TB tests during periodic medical examination, general industry) x (.08 (hours of worker time for return reading) + 1 (hour of worker travel time for test)) = **4,653 hours**
Cost: 4,653 hours x $24.75 = **$115,162**

Burden hours: 11,683 (onsite TB tests during periodic medical examination, construction industry) x .08 (hours of worker time for return reading) = **935 hours**
Cost: 935 hours x $31.63 = **$29,574**

year 4 (3 years after implementation). This includes triennial exams for workers tested in year 1 as well as initial testing of workers conducted in year 4.

Burden hours: 8,416 (offsite TB tests during periodic medical examination, construction industry) x (.08 (hours of worker time for return reading) + 1.5 (hour of worker travel time for test)) = **13,297 hours**
Cost: 13,297 hours x $31.63 = **$420,584**

Total burden hours: 567 + 4,653 + 935 + 13,297 = **19,452 hours**
Total cost: $14,033+ $115,162+ $29,574 + $420,584 **= $579,353**

3. Information Provided to the PLHCP and Specialist (§§ 1910.1053(i)(4)(i)-(iv), (i)(6)(ii) and 1926.1153(h)(4)(i)-(iv), (h)(6)(ii))

Paragraph (i)(4)(i)-(iv) of the general industry standard (paragraph (h)(4)(i)-(iv) of the construction standard) 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. The Standards require employers to make the PLHCP aware of Appendix B by providing a copy of the appropriate standard to the PLHCP.

Paragraph (i)(6)(ii) of the general industry standard and paragraph (h)(6)(ii) of the construction standard require the employer to provide the specialist with the same information that the employer provides to the original PLHCP. In the FEA, OSHA estimates that there will be 603 new cases of silicosis a year among general industry and maritime workers and 563 new cases among construction workers.[35]

An employer must provide the PLHCP with specific information on each worker who is medically examined. OSHA assumes that a human resource manager requires 15 minutes (.25 hours) to develop the specified information and provide it to the PLHCP for initial and periodic exams. OSHA assumes that a human resource manager requires 60 minutes (1 hour) to develop the specified information and provide it to the specialist for initial and periodic exams. The burden hours and cost associated with these provisions are:

Burden hours: 26,549[36] (initial examinations, general industry) x .25 (hours of HR manager time) = **6,637 hours**
Cost: 6,637 hours x $74.97 = **$497,576**

[35]See: FEA, Tables V-18 and V-65 and ERG spreadsheet, "Silica Program Costs, "Surveillance Costs"

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

Burden hours: 76,088[37] (initial examinations, construction) x .25 (hours of HR manager time) = **19,022 hours**
Cost: 19,022 hours x $74.97 = **$1,426,079**

Burden hours: 544 (specialist examinations, general industry) x 1 (hour of HR manager time) = **544 hours**
Cost: 544 hours x $74.97 = **$40,784**

Burden hours: 563 (specialist examinations, construction) x 1 (hour of HR manager time) = **563 hours**
Cost: 563 hours x $74.97 = **$42,208**

Total burden hours: 6,637 + 19,022 + 544 + 563 = **26,766 hours**
Total cost: $497,576 + $1,426,079 + $40,784 + $42,208 **= $2,006,647**

4. PLHCP's Written Medical Report and Opinion (§§ 1910.1053(i)(5) and (i)(6) and 1926.1153(h)(5) and (h)(6)) and Specialist's Written Medical Report and Opinion (§§ 1910.1053(i)(7)(iii) and (i)(7)(iv) and 1926.1153(h)(7)(iii) and (h)(7)(iv))

In the FEA, the cost for the PLHCP and Specialist's written medical report to the worker and medical opinion to the employer are included in the costs for medical exams provided in paragraphs 1, 2, and 5 of this section (Item 12, E.) on Medical Surveillance. The burden hours and costs to provide the report and opinion are described below.

a. Worker and Human Resources Manager Time and Cost to Provide the PLHCP's Written Medical Report to the Worker and Opinion to the Employer

Burden hours: 27,093 (medical examinations, general industry) x .25 (hour of HR manager time) = **6,773 hours**
Cost: 6,773 hours x $74.97 = **$507,772**

Burden hours: 76,651 (medical examinations, construction) x .25 (hour of HR manager time) = **19,163 hours**
Cost: 19,163 hours x $74.26 = **$1,423,044**

Total Burden hours: **25,936 hours**
Total Cost: **$1,930,816**

5. Additional Examinations (§§ 1910.1053(i)(7), (i)(7)(i) and (i)(7)(ii) and 1926.1153(h)(7), (h)(7)(i) and (h)(7)(ii).)

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

The requirements specified by §§ 1910.1053(i)(7), (i)(7)(i) and (i)(7)(ii) and 1926.1153(h)(7), (h)(7)(i) and (h)(7)(ii) address the additional medical examination employers must make available to workers if the PLHCP's written medical opinion indicates that a specialist should examine the worker. The employer must make the examination available within 30 days after receiving the PLHCP's written medical opinion. The specialist must be provided with the same information that the employer is required to give the PLHCP, under paragraph (i)(4) of the general industry standard (paragraph (h)(4) of the construction standard), described in paragraph 4 of this section.

As noted in this Section, paragraph 3, above, OSHA estimates that there will be 544 new cases of silicosis a year among general industry and maritime workers and 563 new cases among construction workers. The Agency assumes that the number of silicosis cases is the same as the number of cases referred to a 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 and 1.5 hours for construction. The detailed burden hours and cost associated with the pulmonary-specialist examination provision are available in Table 24 in the attachments to this Supporting Statement.

Total burden hours: **2,494 hours**
Total cost: **$71,401**

F. <u>Rule Familiarization</u>

OSHA expects that the employer will assign responsibility for investigating the details of the final rule, and for determining how to implement it, to one or more supervisors. OSHA assumes that the time supervisors will require for rule familiarization will be based on a number of factors, including establishment size. The agency estimates that supervisors in small establishments will require 4 hours to become familiar with the final rule, while supervisors in medium establishment will require 8 hours and those in large establishment will require 40 hours. OSHA's estimate of familiarization costs therefore reflects the total supervisor familiarization time (costed at a supervisory wage) for each covered employer, with the number of employees at each establishment also serving as a proxy to represent the diversity of silica activities.

Burden hours: 51,949 affected establishments in small general industry establishments x 4 (hours of supervisor time) = **207,796 hours**
Cost: 207,797 x $40.38 = **$8,390,802**

Burden hours: 24,271 affected establishments in medium general industry establishments x 8 (hours of supervisor time) = **194,168 hours**
Cost: 194,168 x $40.38 = **$7,840,504**

Burden hours: 641 affected establishments in large general industry establishments x 40 (hours of supervisor time) = **25,640 hours**
Cost: 25,640 x $40.38 = **$1,035,343**

Burden hours: 545,417 affected establishments in small construction establishments x 4 (hours of supervisor time) = **2,181,668 hours**
Cost: 2,181,668 x $44.04 = **$96,080,659**

Burden hours: 59,743 affected establishments in medium construction establishments x 8 (hours of supervisor time) = **477,944 hours**
Cost: 477,944 x $44.04 = **$21,048,654**

Burden hours: 560 affected establishments in large construction establishments x 40 (hours of supervisor time) = **22,400 hours**
Cost: 22,400 x $44.04 = **$986,496**

Total Burden hours: 207,796 + 194,168 + 25,640 + 2,181,668 + 477,944 + 22,400 = **3,109,616**
Total Cost: $8,390,802 + $7,840,504 + $1,035,343 + $96,080,659 + $21,048,654 + $986,496 = **$135,382,458**

G. Recordkeeping (§§ 1910.1053(k) and 1926.1153(j))

1. Air-Monitoring Data (§§ 1910.1053(k)(1) and 1926.1153(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 task 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 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. The air-monitoring data are 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 assumes that it will take a human resources manager 15 minutes (.25 hours) to establish and maintain the air-monitoring records

associated with exposure monitoring. In subsequent years, the Agency estimates that it will require 15 minutes (.25 hours) to update periodic and additional assessment records. The burden hours and cost associated with these provisions are:

Burden hours: 177,488 (exposure assessments, general industry) x .25 (hours of HR manager time) = **44,372 hours**
Cost: 44,372 x $74.97 = **$3,326,569**

Burden hours: 20,894 (exposure assessments, construction) x .25 (hours of HR manager time) = **5,224 hours**
Cost: 5,224 x $74.26 = **$387,934**

Total burden hours: 44,372 + 5,224 = **49,596 hours**
Total cost: $3,326,569 + $387,934 = **$3,714,503**

2. Objective Data (§§ 1910.1053(k)(2) and 1926.1153(j)(2))

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

3. Medical Surveillance (§§ 1910.1053(k)(3) and 1926.1153(j)(3))

This provision requires employers to make and maintain an accurate record for each worker subject to medical surveillance under the Standards. These records must include the following information: the name of the worker; a copy of the PLHCP's and specialist's written medical opinions about the worker; and a copy of the information provided to the PLHCPs and specialists as required by paragraph (i)(4) of the general industry standard (paragraph (h)(4) of the construction standard). The information provided to the PLHCPs and 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 794,993 workers who receive initial medical surveillance (26,549 in general industry and 76,088 in construction), periodic medical surveillance (244,091 in general industry and 447,159 in construction)[38], and additional medical examinations (544 in general industry and 563 in construction). OSHA assumes that it will take a human resources manager

[38] The hour burden and costs presented for periodic examinations represent all medical examination in year 4 (3rd year after implementation).

15 minutes (.25 hours), on average per screening, to establish and prepare the file for workers' initial and periodic medical-examination records. OSHA estimates that it will take 1 hour to prepare and maintain workers' medical records for additional medical examinations. The burden hours and cost associated with these provisions are:

Burden hours: ((26,549 (initial examinations, general industry) x .25 (hours of HR manager time)) + (244,091 (periodic examinations, general industry) x .25 (hours of HR manager time))) + (544 (additional examinations, general industry) x 1 (hour of HR manager time))) = **68,204 hours**
Cost: 68,204 x $74.97 = **$5,113,254**

Burden hours: ((76,088 (initial examinations, construction) x .25 (hours of HR manager time)) + (447,159 (periodic examinations, construction) x .25 (hours of HR manager time)) + (563 (additional examinations, construction) x 1 (hour of HR manager time))) = **131,374 hours**
Cost: 131,374 x $74.26 = **$9,755,833**

Total burden hours: 68,204 + 131,374 = **199,578 hours**
Total cost: $5,113,254 + $9,755,833 = **$14,869,087**

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 ("Operating and Maintenance Cost (Item 13)") of Table A ("Summary of Burden Hours, Burden-Hour Cost, and Operating and Maintenance 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. In the FEA, the Agency estimates that the cost for contract industrial hygienist services for each exposure assessment sample will range from $312.50 to $1,250 for initial exposure monitoring and from $156.25 to $1,250 for periodic monitoring, depending on the size of the establishment. Laboratory fees and shipping will cost an additional $140.27. 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 $406.57, a specialist exam to be $210.89, and a TB test to be $16.63. The detailed costs are shown in Tables 15, 25, and 18. The contract medical examinations include the same assumptions about onsite and offsite medical examinations costs as Item12.

The total operation and maintenance cost for the exposure assessments and medical examinations provided under the Standards are $393,789,901.

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.

Usually, OSHA requests access to records during an inspection. Information collected by the Agency during the investigation is not subject to the PRA under 5 CFR 1320.4(a)(2). Therefore,

OSHA takes no burden or cost in Items 12 and 14 of this Supporting Statement for disclosing information during an inspection.

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

As part of the SIP-IV rulemaking, OSHA removed the requirement that employers document employees' social security numbers (SSN) in their exposure and medical records. Time to document SSN in records is negligible, and therefore the Agency is not requesting any changes in the burden hour or cost estimates as a result.

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. 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.

OSHA lists current valid control numbers in §§ 1910.8, 1915.8, 1917.4, 1918.4, and 1926.5 and publishes the expiration date in the Federal Register notice announcing OMB approval of the collection of information. (See 5 CFR 1320.3(f)(3).) OSHA believes that this is the most appropriate and accurate mechanism to inform interested parties of these expiration dates.

18. Explain each exception to the certification statement.

OSHA is not requesting an exception to the certification statement.

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

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

Table A

Summary of Burden Hours, Burden-Hour Cost, and Operating and Maintenance Cost Under Items 12 and 13 of this Supporting Statement

Collection of Information Requirements (Item 2)	Current Burden Hours (Item 12)	Requested Burden Hours (Item 12)	Change	Final Burden Hour Cost (Item 12)	Proposed Rule O&M [i] Cost (Item 13)	Final Rule O&M Cost (Item 13)	Number of Responses
A. Exposure Assessment (§§ 1910.1053(d)) and 1926.1153(d)(2))							
1. Performance option (paragraph (d)(2) of §§ 1910.1053 and (d)(2)(ii) of §§ 1926.1153)							
a. Worker Time and Cost - Initial Exposure Assessment (Table 1)	37,510	37,510	0	$947,403	_	_	75,018
b. Contract Cost for an Industrial Hygienist to Conduct Analysis of Initial Exposure Assessment (Table 2)	_	_	0	_	$34,337,351	$49,496,199	_
c. Contract Cost for a Laboratory to Conduct Analysis of Initial Exposure Assessment (Table 2)	–	–	0	_	$34,741,890	$10,522,775	_
2. Scheduled Monitoring Option and Reassessment of Exposures (paragraphs (d)(3) and (d)(4) of §§ 1910.1053 and (d)(2)(iii) and (d)(2)(iv) of § 1926.1153)							
a. Worker Time and Cost - Periodic and Additional Exposure Assessment (Table 3)	61,682	61,682	0	$1,579,482	_	_	123,364
b. Contract Cost for an Industrial Hygienist to Conduct Analysis of Periodic Exposure Assessment (Table 4)	_	_	0	_	$27,933,605	$49,621,271	_
c. Contract Cost for a Laboratory to Conduct Analysis of Periodic Exposure Assessment (Table 4)	–	–	0	_	$31,284,011	$4,349,632	_
3. Employee Notification of Assessment Results (paragraph (d)(6) of § 1910.1053 and (d)(2)(vi) of § 1926.1153)							
a. Human Resources Manager Time to Notify Workers of Exposure Assessment Results (Table 5)	49,595	49,595	0	$3,714,503	_	_	198,382
B. Written Exposure Control Plan (paragraph (f)(2) of § 1910.1053 and paragraph (g) of § 1926.1153)							
a. Supervisor Time and Cost - Development of Plan (Table 6)	951,286	951,286	0	$41,316,586	_	_	682,243
b. Supervisor Time and Cost - Review and Update Plan (Table 7)	475,644	475,644	0	$20,658,335			682,243

Collection of Information Requirements (Item 2)	Current Burden Hours (Item 12)	Requested Burden Hours (Item 12)	Change	Final Burden Hour Cost (Item 12)	Proposed Rule O&M Cost (Item 13)	Final Rule O&M Cost (Item 13)	Number of Responses
c. Supervisor Time and Cost- Implementation of Plan (Construction) (Table 8)	2,725,741	2,725,741	0	$120,041,634	_	_	605,720
d. Supervisor Time and Cost - Make Plan Available to Employees and Designated Representatives (Table 8a)	9,994	9,994	0	$435,678	_	_	124,925
e. *Proposed* Written Access-Control Plan (paragraph (e)(3) of § 1926.1153) - Supervisor Time and Cost - Development of Plan (no longer a requirement)	0	0	0	$0	_	_	_
f. *Proposed* Written Access-Control Plan (paragraph (e)(3) of § 1926.1153) - Implementation of Plan (no longer a requirement)	0	0	0	$0	_	_	_
C. Air Quality Permit Notification							
1. HR Manager Time and Cost for Creating and Submitting the Air Quality Permit Notification (Table 9)	342,200	342,200	0	$25,654,734	_	_	16,535
D. Respiratory Protection (§§ 1910.1053(g) and 1926.1153(e))							
1. Respiratory Protection Program: Costs to Establish Program (paragraph (g)(2) of § 1910.1053 and (e)(2) of § 1926.1153)							
a. Human Resources Manager Time and Cost to Establish Respiratory Protection Program (Tables 10, 10a & 11)	175,626	175,626	0	$13,052,995	_	_	42,044
2. Respiratory Protection Program: Costs to Revise Program (paragraph (g)(2) of § 1910.1053 and (e)(2) of § 1926.1153)							
a. Human Resources Manager Time and Cost to Revise Respiratory Protection Program (Tables 10, 10a & 11)	17,560	17,560	0	$1,305,106	_	_	8,408
3. Respirator Protection: Qualitative Fit Test Costs (paragraph (g)(2) of § 1910.1053 and (e)(2) of § 1926.1153)							

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Collection of Information Requirements (Item 2)	Current Burden Hours (Item 12)	Requested Burden Hours (Item 12)	Change	Final Burden Hour Cost (Item 12)	Proposed Rule O&M Cost (Item 13)	Final Rule O&M Cost (Item 13)	Number of Responses
a. Supervisor and Worker Time and Cost to Complete Fit-Testing (Table 12)	369,959	369,959	0	$12,376,792	_	_	591,934
b. Clerical Time and Cost to Establish and Maintain Fit Test Record	_	_	0	_	_	_	_
c. Cost of Materials for Qualitative Fit Test						$0	
E. Medical Surveillance (§§ 1910.1053(i) and 1926.1153(h))							
1. Initial Medical Examination (§§ 1910.1053(i)(2)(i)-(vi) and 1926.1153(h)(2)(i)-(vi))							
a. Worker Time and Cost to Complete the Initial Medical Examination - Existing Workers (Table 13)	1,047,836	1,047,836	0	$30,826,323	_	_	412,175
b. Worker Time and Cost to Complete the Initial Medical Examination - New Workers (Table 14)	289,452	289,452	0	$8,684,549	_	_	102,637
c. Contract Cost for a PLHCP to Conduct the Initial Medical Examination (Table 15)			0		$138,481,348	$209,307,214	_
d. Worker Time and Cost for Latent TB Test Return Reading During Initial Medical Examination - Existing Workers (Table 16)	256,459	256,459	0	$7,665,473	_	_	412,175
e. Worker Time and Cost for Latent TB Test Return Reading During Initial Medical Examination - New Workers (Table 17)	92,386	92,386	0	$2,802,066	_	_	102,637
f. Contract Cost for a PLHCP to Conduct the Latent TB Test During Initial Medical Examination (Table 18)	_	_	_	_	$6,637,215	$8,561,324	_
2. Periodic Medical Examination (§§ 1910.1053(i)(3) and 1926.1153(h)(3))							
a. Worker Time and Cost to Complete the Periodic Medical Examination (Table 19)	1,781,995	1,781,995	0	$52,334,309	_	_	176,437
b. Contract Cost for a PLHCP to Conduct the Periodic Medical Examination (Table 20)	_	_	0	_	$0	$61,174,392	_

Collection of Information Requirements (Item 2)	Current Burden Hours (Item 12)	Requested Burden Hours (Item 12)	Change	Final Burden Hour Cost (Item 12)	Proposed Rule O&M Cost (Item 13)	Final Rule O&M Cost (Item 13)	Number of Responses
c. Worker Time and Cost to Complete Latent TB Test Return Reading During Periodic Medical Examination (Table 21)	19,452	19,452	0	$579,353	_	_	31,492
d. Contract Cost for a PLHCP to Conduct Latent TB Test During Periodic Medical Examination (Table 18)	_	_	0	_	$0	$523,712	_
3. Information Provided to the PLHCP and Specialist (§§ 1910.1053(i)(4)(i)-(iv), (i)(7)(ii) and 1926.1153(h)(4)(i)-(iv), (h)(7)(ii))							
a. Human Resources Manager Time and Cost to Provide Information to the PLHCP (Table 22)	26,766	26,766	0	$2,006,647	_	_	102,637
4. PLHCP's Written Medical Report and Opinion (§§ 1910.1053(i)(5) and (i)(6) and 1926.1153(h)(5) and (h)(6) and Specialist's Written Medical Report and Opinion (1910.1053(i)(7)(iii) and (i)(7)(iv) and 1926.1153(h)(7)(iii) and (h)(7)(iv))							
a. Worker and Human Resources Manager Time and Cost to Provide the PLHCP's Written Medical Report to the Worker and Opinion to the Employer (Table 23)	25,936	25,936	0	$1,930,816	_	_	103,744
5. Additional Medical Examinations (§§ 1910.1053(i)(7), (i)(7)(i) and (i)(7)(ii) and 1926.1153(h)(7), (h)(7)(i) and (h)(7)(ii).)							
a. Worker Time and Cost to Complete the Specialist Examination (Table 24)	2,494	2,494	0	$71,401	_		1,107
b. Contract Cost for a PLHCP to Conduct Specialist Examination (Table 25)	_	_	_	_	$88,861	$233,382	_
F. Rule Familiarization							
1.Supervisor Rule Familiarization Time and Cost (Table 26)	3,109,616	3,109,616	0	$135,382,458	_	_	682,581
G. Recordkeeping (§§ 1910.1053(k) and 1926.1153(j))	_						

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Collection of Information Requirements (Item 2)	Current Burden Hours (Item 12)	Requested Burden Hours (Item 12)	Change	Final Burden Hour Cost (Item 12)	Proposed Rule O&M Cost (Item 13)	Final Rule O&M Cost (Item 13)	Number of Responses
1. Air Monitoring Data and Objective Data (§§ 1910.1053(k)(1) and 1926.1153(j)(1))							
a. Human Resources Manager Time and Cost to Establish and Maintain Record for Exposure Monitoring Data (Table 27)	49,596	49,596	0	$3,714,503	_	_	198,382
2. Objective Data (§§ 1910.1053(k)(2) and 1926.1153(j)(2))	_	_	_	_	_	_	_
3. Medical Surveillance (§§ 1910.1053(k)(3) and 1926.1153(j)(3))							
a. Human Resources Manager Time and Cost to Establish and Maintain Record for Medical Surveillance (Table 28)	199,578	199,578	0	$14,869,087	_	_	794,993
4. Disclosing Information During an Inspection	0	0	0	$0	_	_	0
TOTAL	**12,118,364**	**12,118,364**	**0**	**$501,950,233**	**$273,504,281**	**$393,789,901**	**6,271,812**

[i] "O&M" - Operating and Maintenance