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dust. Compressed air or dry methods must not be used for such cleaning.

(c) The responsible employer must equip the portable or mobile vacuum units that are used to clean beryllium-contaminated areas with HEPA filters, and change the filters as often as needed to maintain their capture efficiency.

(d) The responsible employer must ensure that the cleaning equipment that is used to clean beryllium-contaminated surfaces is labeled, controlled, and not used for non-hazardous materials.

§ 850.31 Release criteria.

(a) The responsible employer must clean beryllium-contaminated equipment and other items to the lowest contamination level practicable, but not to exceed the levels established in paragraphs (b) and (c) of this section, and label the equipment or other items, before releasing them to the general public or a DOE facility for non-beryllium use, or to another facility for work involving beryllium.

(b) Before releasing beryllium-contaminated equipment or other items to the general public or for use in a non-beryllium area of a DOE facility, the responsible employer must ensure that:

(1) The removable contamination level of equipment or item surfaces does not exceed the higher of 0.2 µg/100 cm² or the concentration level of beryllium in soil at the point of release, whichever is greater;

(2) The equipment or item is labeled in accordance with § 850.38(b); and

(3) The release is conditioned on the recipient's commitment to implement controls that will prevent foreseeable beryllium exposure, considering the nature of the equipment or item and its future use and the nature of the beryllium contamination.

(c) Before releasing beryllium-contaminated equipment or other items to another facility performing work with beryllium, the responsible employer must ensure that:

(1) The removable contamination level of equipment or item surfaces does not exceed 3 µg/100 cm²;

(2) The equipment or item is labeled in accordance with § 850.38(b); and

(3) The equipment or item is enclosed or placed in sealed, impermeable bags

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or containers to prevent the release of beryllium dust during handling and transportation.

§ 850.32 Waste disposal.

(a) The responsible employer must control the generation of beryllium-containing waste, and beryllium-contaminated equipment and other items that are disposed of as waste, through the application of waste minimization principles.

(b) Beryllium-containing waste, and beryllium-contaminated equipment and other items that are disposed of as waste, must be disposed of in sealed, impermeable bags, containers, or enclosures to prevent the release of beryllium dust during handling and transportation. The bags, containers, and enclosures that are used for disposal of beryllium waste must be labeled according to § 850.38.

§ 850.33 Beryllium emergencies.

(a) The responsible employer must comply with 29 CFR 1910.120(1) for handling beryllium emergencies related to decontamination and decommissioning operations.

(b) The responsible employer must comply with 29 CFR 1910.120(q) for handling beryllium emergencies related to all other operations.

§ 850.34 Medical surveillance.

(a) *General.* (1) The responsible employer must establish and implement a medical surveillance program for beryllium-associated workers who voluntarily participate in the program.

(2) The responsible employer must designate a Site Occupational Medical Director (SOMD) who is responsible for administering the medical surveillance program.

(3) The responsible employer must ensure that the medical evaluations and procedures required by this section are performed by, or under the supervision of, a licensed physician who is familiar with the health effects of beryllium.

(4) The responsible employer must establish, and maintain, a list of beryllium-associated workers who may be eligible for protective measures under this part. The list must be:

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(i) Based on the hazard assessment, exposure records, and other information regarding the identity of beryllium-associated workers; and

(ii) Adjusted at regular intervals based on periodic evaluations of beryllium-associated workers performed under paragraph (b)(2) of this section;

(5) The responsible employer must provide the SOMD with the information needed to operate and administer the medical surveillance program, including the:

(i) List of beryllium-associated workers required by paragraph (a)(4) of this section;

(ii) Baseline inventory;

(iii) Hazard assessment and exposure monitoring data;

(iv) Identity and nature of activities or operations on the site that are covered under the CBDPP, related duties of beryllium-associated workers; and

(v) Type of personal protective equipment used.

(6) The responsible employer must provide the following information to the SOMD and the examining physician:

(i) A copy of this rule and its preamble;

(ii) A description of the worker's duties as they pertain to beryllium exposure;

(iii) Records of the worker's beryllium exposure; and

(iv) A description of the personal protective and respiratory protective equipment used by the worker in the past, present, or anticipated future use.

(b) *Medical evaluations and procedures.* The responsible employer must provide, to beryllium-associated workers who voluntarily participate in the medical surveillance program, the medical evaluations and procedures required by this section at no cost and at a time and place that is reasonable and convenient to the worker.

(1) *Baseline medical evaluation.* The responsible employer must provide a baseline medical evaluation to beryllium-associated workers. This evaluation must include:

(i) A detailed medical and work history with emphasis on past, present, and anticipated future exposure to beryllium;

(ii) A respiratory symptoms questionnaire;

(iii) A physical examination with special emphasis on the respiratory system, skin and eyes;

(iv) A chest radiograph (posterior-anterior, 14 × 17 inches) interpreted by a National Institute for Occupational Safety and Health (NIOSH) B-reader of pneumoconiosis or a board-certified radiologist (unless a baseline chest radiograph is already on file);

(v) Spirometry consisting of forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV1);

(vi) A Be-LPT; and

(vii) Any other tests deemed appropriate by the examining physician for evaluating beryllium-related health effects.

(2) *Periodic evaluation.* (i) The responsible employer must provide to beryllium workers a medical evaluation annually, and to other beryllium-associated workers a medical evaluation every three years. The periodic medical evaluation must include:

(A) A detailed medical and work history with emphasis on past, present, and anticipated future exposure to beryllium;

(B) A respiratory symptoms questionnaire;

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

(D) A Be-LPT; and

(E) Any other medical evaluations deemed appropriate by the examining physician for evaluating beryllium-related health effects.

(ii) The responsible employer must provide to beryllium-associated workers a chest radiograph every five years.

(3) *Emergency evaluation.* The responsible employer must provide a medical evaluation as soon as possible to any worker who may have been exposed to beryllium because of a beryllium emergency. The medical evaluation must include the requirements of paragraph (b)(2) of this section.

(c) *Multiple physician review.* The responsible employer must establish a multiple physician review process for beryllium-associated workers that allows for the review of initial medical

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findings, determinations, or recommendations from any medical evaluation conducted pursuant to paragraph (b) of this section.

(1) If the responsible employer selects the initial physician to conduct any medical examination or consultation provided to a beryllium-associated worker, the worker may designate a second physician to:

(i) Review any findings, determinations, or recommendations of the initial physician; and

(ii) Conduct such examinations, consultations and laboratory tests, as the second physician deems necessary to facilitate this review.

(2) The responsible employer must promptly notify a beryllium-associated worker in writing of the right to seek a second medical opinion after the initial physician provided by the responsible employer conducts a medical examination or consultation.

(3) The responsible employer may condition its participation in, and payment for, multiple physician review upon the beryllium-associated worker doing the following within fifteen (15) days after receipt of the notice, or receipt of the initial physician's written opinion, whichever is later:

(i) Informing the responsible employer in writing that he or she intends to seek a second medical opinion; and

(ii) Initiating steps to make an appointment with a second physician.

(4) If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the responsible employer and the beryllium-associated worker must make efforts to encourage and assist the two physicians to resolve any disagreement.

(5) If, despite the efforts of the responsible employer and the beryllium-associated worker, the two physicians are unable to resolve their disagreement, then the responsible employer and the worker, through their respective physicians, must designate a third physician to:

(i) Review any findings, determinations, or recommendations of the other two physicians; and

(ii) Conduct such examinations, consultations, laboratory tests, and consultations with the other two physi-

cians, as the third physician deems necessary to resolve the disagreement among them.

(6) The SOMD must act consistently with the findings, determinations, and recommendations of the third physician, unless the SOMD and the beryllium-associated worker reach an agreement that is consistent with the recommendations of at least one of the other two physicians.

(d) *Alternate physician determination.* The responsible employer and the beryllium-associated worker or the worker's designated representative may agree upon the use of any alternate form of physician determination in lieu of the multiple physician review process provided by paragraph (c) of this section, so long as the alternative is expeditious and at least as protective of the worker.

(e) *Written medical opinion and recommendation.* (1) Within two weeks of receipt of results, the SOMD must provide to the responsible employer a written, signed medical opinion for each medical evaluation performed on each beryllium-associated worker. The written opinion must take into account the findings, determinations and recommendations of the other examining physicians who may have examined the beryllium-associated worker. The SOMD's opinion must contain:

(i) The diagnosis of the worker's condition relevant to occupational exposure to beryllium, and any other medical condition that would place the worker at increased risk of material impairment to health from further exposure to beryllium;

(ii) Any recommendation for removal of the worker from DOE beryllium activities, or limitation on the worker's activities or duties or use of personal protective equipment, such as a respirator; and

(iii) A statement that the SOMD or examining physician has clearly explained to the worker the results of the medical evaluation, including all tests results and any medical condition related to beryllium exposure that requires further evaluation or treatment.

(2) The SOMD's written medical opinion must not reveal specific records,

findings, and diagnoses that are not related to medical conditions that may be affected by beryllium exposure.

(f) *Information provided to the beryllium-associated worker.* (1) The SOMD must provide each beryllium-associated worker with a written medical opinion containing the results of all medical tests or procedures, an explanation of any abnormal findings, and any recommendation that the worker be referred for additional testing for evidence of CBD, within 10 working days after the SOMD's receipt of the results of the medical tests or procedures.

(2) The responsible employer must, within 30 days after a request by a beryllium-associated worker, provide the worker with the information the responsible employer is required to provide the examining physician under paragraph (a)(6) of this section.

(g) *Reporting.* The responsible employer must report on the applicable OSHA reporting form beryllium sensitization, CBD, or any other abnormal condition or disorder of workers caused or aggravated by occupational exposure to beryllium.

(h) *Data analysis.* (1) The responsible employer must routinely and systematically analyze medical, job, and exposure data with the aim of identifying individuals or groups of individuals potentially at risk for CBD and working conditions that are contributing to that risk.

(2) The responsible employer must use the results of these analyses to identify additional workers to whom the responsible employer must provide medical surveillance and to determine the need for additional exposure controls.

§ 850.35 Medical removal.

(a) *Medical removal protection.* The responsible employer must offer a beryllium-associated worker medical removal from exposure to beryllium if the SOMD determines in a written medical opinion that it is medically appropriate to remove the worker from such exposure. The SOMD's determination must be based on one or more positive Be-LPT results, chronic beryllium disease diagnosis, an examining physician's recommendation, or any

other signs or symptoms that the SOMD deems medically sufficient to remove a worker.

(1) *Temporary removal pending final medical determination.* The responsible employer must offer a beryllium-associated worker temporary medical removal from exposure to beryllium on each occasion that the SOMD determines in a written medical opinion that the worker should be temporarily removed from such exposure pending a final medical determination of whether the worker should be removed permanently.

(i) In this section, "final medical determination" means the outcome of the multiple physician review process or the alternate medical determination process provided for in paragraphs (c) and (d) of § 850.34.

(ii) If a beryllium-associated worker is temporarily removed from beryllium exposure pursuant to this section, the responsible employer must transfer the worker to a comparable job for which the worker is qualified (or for which the worker can be trained in a short period) and where beryllium exposures are as low as possible, but in no event at or above the action level.

(iii) The responsible employer must maintain the beryllium-associated worker's total normal earnings, seniority, and other worker rights and benefits as if the worker had not been removed.

(iv) If there is no such job available, the responsible employer must provide to the beryllium-associated worker the medical removal protection benefits specified in paragraph (b)(2) of this section, until a job becomes available or for one year, whichever comes first.

(2) *Permanent medical removal.* (i) The responsible employer must offer a beryllium-associated worker permanent medical removal from exposure to beryllium if the SOMD determines in a written medical opinion that the worker should be permanently removed from exposure to beryllium.

(ii) If a beryllium-associated worker is removed permanently from beryllium exposure based on the SOMD's recommendation pursuant to this section, the responsible employer must