

Department of Energy

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beryllium, as shown by the baseline inventory and hazard assessment. The responsible employer must apply statistically-based monitoring strategies to obtain a sufficient number of sample results to adequately characterize exposures, before reducing or terminating monitoring.

(1) The responsible employer must determine workers' 8-hour TWA exposure levels by conducting personal breathing zone sampling.

(2) Exposure monitoring results obtained within the 12 months preceding the effective date of this part may be used to satisfy this requirement if the measurements were made as provided in paragraph (b)(1) of this section.

(c) *Periodic exposure monitoring.* The responsible employer must conduct periodic monitoring of workers who work in areas where airborne concentrations of beryllium are at or above the action level. The monitoring must be conducted in a manner and at a frequency necessary to represent workers' exposure, as specified in the CBDPP. This periodic exposure monitoring must be performed at least every 3 months (quarterly).

(d) *Additional exposure monitoring.* The responsible employer must perform additional monitoring if operations, maintenance or procedures change, or when the responsible employer has any reason to suspect such a change has occurred.

(e) *Accuracy of monitoring.* The responsible employer must use a method of monitoring and analysis that has an accuracy of not less than plus or minus 25 percent, with a confidence level of 95 percent, for airborne concentrations of beryllium at the action level.

(f) *Analysis.* The responsible employer must have all samples collected to satisfy the monitoring requirements of this part analyzed in a laboratory accredited for metals by the American Industrial Hygiene Association (AIHA) or a laboratory that demonstrates quality assurance for metals analysis that is equivalent to AIHA accreditation.

(g) *Notification of monitoring results.*

(1) The responsible employer must, within 10 working days after receipt of any monitoring results, notify the affected workers of monitoring results in

writing. This notification of monitoring results must be:

(i) Made personally to the affected worker; or

(ii) Posted in location(s) that is readily accessible to the affected worker, but in a manner that does not identify the individual to other workers.

(2) If the monitoring results indicate that a worker's exposure is at or above the action level, the responsible employer must include in the notice:

(i) A statement that the action level has been met or exceeded; and

(ii) A description of the corrective action being taken by the responsible employer to reduce the worker's exposure to below the action level, if practicable.

(3) If the monitoring results indicate that worker exposure is at or above the action level, the responsible employer must also notify DOE and the SOMD of these results within 10 working days after receipt.

§ 850.25 Exposure reduction and minimization.

(a) The responsible employer must ensure that no worker is exposed above the exposure limit prescribed in § 850.22.

(b) The responsible employer must, in addition:

(1) Where exposure levels are at or above the action level, establish a formal exposure reduction and minimization program to reduce exposure levels to below the action level, if practicable. This program must be described in the responsible employer's CBDPP and must include:

(i) Annual goals for exposure reduction and minimization;

(ii) A rationale for and a strategy for meeting the goals;

(iii) Actions that will be taken to achieve the goals; and

(iv) A means of tracking progress towards meeting the goals or demonstrating that the goals have been met.

(2) Where exposure levels are below the action level, implement actions for reducing and minimizing exposures, if practicable. The responsible employer must include in the CBDPP a description of the steps to be taken for exposure reduction and minimization and a rationale for those steps.

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(c) The responsible employer must implement exposure reduction and minimization actions using the conventional hierarchy of industrial hygiene controls (*i.e.*, engineering controls, administrative controls, and personal protective equipment in that order).

§ 850.26 Regulated areas.

(a) If airborne concentrations of beryllium in areas in DOE facilities are measured at or above the action level, the responsible employer must establish regulated areas for those areas.

(b) The responsible employer must demarcate regulated areas from the rest of the workplace in a manner that adequately alerts workers to the boundaries of such areas.

(c) The responsible employer must limit access to regulated areas to authorized persons.

(d) The responsible employer must keep records of all individuals who enter regulated areas. These records must include the name, date, time in and time out, and work activity.

§ 850.27 Hygiene facilities and practices.

(a) *General.* The responsible employer must assure that in areas where workers are exposed to beryllium at or above the action level, without regard to the use of respirators:

(1) Food or beverage and tobacco products are not used;

(2) Cosmetics are not applied, except in change rooms or areas and shower facilities required under paragraphs (b) and (c) of this section; and

(3) Beryllium workers are prevented from exiting areas that contain beryllium with contamination on their bodies or their personal clothing.

(b) *Change rooms or areas.* The responsible employer must provide clean change rooms or areas for beryllium workers who work in regulated areas.

(1) Separate facilities free of beryllium must be provided for beryllium workers to change into, and store, personal clothing, and clean protective clothing and equipment to prevent cross-contamination;

(2) The change rooms or areas that are used to remove beryllium-contaminated clothing and protective equip-

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ment must be maintained under negative pressure or located so as to minimize dispersion of beryllium into clean areas; and

(c) *Showers and handwashing facilities.*

(1) The responsible employer must provide handwashing and shower facilities for beryllium workers who work in regulated areas.

(2) The responsible employer must assure that beryllium workers who work in regulated areas shower at the end of the work shift.

(d) *Lunchroom facilities.* (1) The responsible employer must provide lunchroom facilities that are readily accessible to beryllium workers, and ensure that tables for eating are free of beryllium, and that no worker in a lunchroom facility is exposed at any time to beryllium at or above the action level.

(2) The responsible employer must assure that beryllium workers do not enter lunchroom facilities with protective work clothing or equipment unless the surface beryllium has been removed from clothing and equipment by HEPA vacuuming or other method that removes beryllium without dispersing it.

(e) The change rooms or areas, shower and handwashing facilities, and lunchroom facilities must comply with 29 CFR 1910.141, Sanitation.

§ 850.28 Respiratory protection.

(a) The responsible employer must establish a respiratory protection program that complies with the respiratory protection program requirements of 29 CFR 1910.134, Respiratory Protection.

(b) The responsible employer must provide respirators to, and ensure that they are used by, all workers who:

(1) Are exposed to an airborne concentration of beryllium at or above the action level, or

(2) Are performing tasks for which analyses indicate the potential for exposures at or above the action level.

(c) The responsible employer must include in the respiratory protection program any beryllium-associated worker who requests to use a respirator for protection against airborne beryllium, regardless of measured exposure levels.