Clarification & Guidance
DOE-0342 Chronic Beryllium Disease Prevention Procedure

☒ Proposed	☒ Reviewed	☐ Rejected	☒ Accepted	☐ Approved for Use	Procedure Updated	Complete ☐	N/A ☐

ID Number: 0342-35 **Title/Subject: Section 6.17, Engineering Controls**

Initiated by: Larry Sherman **Company:** BeCAP **Date:** 1/26/12 **Ph #:** 551-2503

Issue/Concern/Affected Step(s):
Section 6.17, Engineering Controls, of the current *Hanford Site Chronic Beryllium Disease Prevention Program (CBDPP)* will be affected by the new DOE-0342-003, *Hanford Site Beryllium Posting and Labeling Requirements Procedure*.

Discussion:
Due to the new Hanford Site Beryllium Posting and Labeling Requirements Procedure, current Section 6.17, Engineering Controls, will need to be updated to include referencing of DOE-0342-003.

Recommended Resolution:
Modify language in Section 6.17, Engineering Controls:

Existing Language:

Engineering controls shall be designed into work activity whenever appropriate to minimize exposures, even when exposures are predicted to be below the Action level. Worker PPE will only be used after first considering engineering controls, administrative controls, and regulatory requirements. Engineering controls include but are not limited to the following:

- HEPA filtered air movers that re-circulate air to remove airborne beryllium inside a work area
- Application of appropriate and/or critical barriers to isolate sources of beryllium and prevent the spread of contamination
- Use of negative air pressure to contain airborne beryllium
- Decontamination of surfaces prior to disturbing structural elements of a contaminated building
- Use of wetting agents during demolition of beryllium controlled facilities.
- Intact removal of contaminated ventilation equipment prior to demolition
- Use of powered shears to reduce the size of items during demolition rather than cutting with torches

Fixing beryllium in place using sprayed-on fixatives is an alternative to decontamination. Spraying on fixatives allows handling without the potential for re-suspension of beryllium into the air. Fixatives can be permanent or temporary. Fixed beryllium, however, can still be hazardous if the covering is penetrated (i.e. drilling, grinding and welding), and workers are not aware that beryllium is present. Fixed beryllium surfaces that are released from controlled areas must be labeled in accordance with Section 6.29. Removal of the contamination is required before the warning labels may be removed.

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Proposed Language:

Engineering controls shall be designed into work activities whenever feasible to minimize exposures, even when exposures are predicted to be below the Control or Action levels. Engineering controls shall be the first consideration in personnel protection and the main point of focus during the site condition walk down for the Hazard Assessment. Engineering controls include but are not limited to the following:

- HEPA filtered air movers that re-circulate air to remove airborne beryllium inside a work area
- Application of appropriate and/or critical barriers to isolate sources of beryllium and prevent the spread of contamination
- Use of negative air pressure to contain airborne beryllium
- Decontamination of surfaces prior to disturbing structural elements of a contaminated building
- Use of wetting agents during demolition of beryllium controlled facilities.
- Intact removal of contaminated ventilation equipment prior to demolition
- Use of powered shears to reduce the size of items during demolition rather than cutting with torches

Fixing beryllium contamination in place using sprayed-on fixatives is an alternative to decontamination. Spraying on fixatives allows handling without the potential for re-suspension of beryllium into the air, or the spread of surface contamination. Fixed beryllium, however, can still be hazardous if the covering is penetrated (i.e. drilling, grinding, cutting and welding). It is possible that beryllium contamination from historical processes and/or usage has been encapsulated into painted walls. Sampling is currently unable to effectively quantify beryllium levels in and under paint, therefore, workers may not be aware that beryllium contamination is present. Fixed beryllium contamination, and areas where the possibility that past beryllium has been encapsulated in a painted surface, shall be properly posted and/or labeled per Site Wide Procedure DOE-0342-003 (*Beryllium Posting and Labeling Requirements*).

Clarification ☑ **Guidance:** ☐

Resolution Completion Plan/Summary:
Incorporate language into next revision of DOE-0342.

Remarks: N/A

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Status:

Reviewed	Committee Chair	Scott Seydel	Date 2/16/12
Rejected	Committee Chair	N/A	Date N/A
Accepted	Committee Chair	Scott Seydel	Date 2/16/12
Approve ~~Concurrence~~	PG DOE-RL		Date 2/23/12
Approve ~~Concurrence~~	DOE-ORP		Date 2/29/12
Approved For Use DOE-0342	Committee Chair		Date
Updated	Committee Chair		Date