Savannah River NUCLEAR SOLUTIONS℠
FLUOR DANIEL • NORTHROP GRUMMAN • HONEYWELL

Savannah River Nuclear Solutions Health & Safety Programs Response to Request for Information.
Reference Federal Register/Vol.75, No. 246/Thursday, December 23, 2010/Proposed Rules to 10CFR Part 850.

QUESTION 1

Should the Department continue to use the OSHA PEL?

SRNS believes DOE should defer to the OSHA 8-hr TWA PEL in section 850.22. This is in line with the promulgation of 10 CFR 850. This is due to the DOE limits already being more restrictive.

Mission Impacts

None at Savannah River Site as the PEL has never come into decision making.

Cost Impacts

None at Savannah River Site as explained above.

QUESTION 2

Should the Department use the 2010 TLV of 0.05 micrograms/m3 inhalable as its allowable limit?

SRNS does not recommend that the Department adopt the 2010 ACGIH TLV of 0.05 µg/m3 as an 8-hour TWA for its allowable exposure limit because currently there exists no technical basis for standardization of the sample collection and analytical protocols. (Note that the actual adoption of the TLV occurred in 2009 by the actions of ACGIH).

Mission Impacts

At Savannah River Site, air sampling under 10 CFR 850 is conducted for three purposes: a demonstration of compliance to the rule and submittal of exposure data to the Beryllium Registry; verification of effective engineering controls, primarily isolation; and verification of the protection factor of selected respiratory protection. At SRS, the application of air sampling occurs in legacy area investigations and decontamination efforts only minimally (current 2010 Inventory List contains five legacy areas; all were targeted for remediation and have subsequently been cleared except for one which remains posted and isolated).

Cost Impacts

None if ISMS practices are maintained, as we would justify the logic to not collect an inhalable sample.

QUESTION 3

Should an airborne action level that is different than the 2010 TLV be established?

SRNS does not support establishing an action level different from the current value of 0.2 micrograms/cubic meter without a technical basis defending the relationship to a health consequence.

Mission Impacts

Should a lower action level be established, additional work would be necessary for those occasions of exposure being sampled for determination of valid sample collection.

Cost Impacts

Unable to be determined at this time.

QUESTION 4

In the past DOE encouraged, but did not require, the use of wet wipes rather than dry wipes for surface monitoring. DOE's experience with wipe testing leads the Department to consider requiring the use of wet wipes, unless the employer demonstrates that using wet wipes may cause an undesirable alteration of the surface, in order to achieve greater comparability of results across the DOE complex and in response to studies demonstrating that wet wipes capture more of the surface contamination than dry wipes. Should the Department require the use of wet wipes?

In light of the RFI statement "in order to achieve greater comparability of results across the DOE complex", SRNS recommends that the Department review its goal for surface monitoring and establish a technical basis for a single method across all sites.

Mission Impacts

None as wet wipes currently and routinely used. However, limited classified activity characterizations might be affected.

Cost Impacts

Unknown.

QUESTION 5

How do current wipe sampling protocols aid exposure assessments and the protection of beryllium workers? How reliable and accurate are current sampling and analytical methods for beryllium wipe samples?

SRNS examination of the issues surrounding the first question:

With respect to the first question, the beryllium rule as written and implemented currently at SRS establishes an ALARA concept for beryllium. As a result, wipe samples and settled dust samples are used to define contaminated areas. Contamination areas are posted and formal evaluation of activities occurs for every occasion of disturbance or entry to that area. An activity would only be allowed upon completion of an exposure assessment.

SRNS examination of the issues surrounding the second question:

How reliable and accurate are current sampling and analytical methods for beryllium wipe samples?
SRNS is unaware of ANY validated research on the matter of reliability and accuracy of wipe sampling. Plenty of information is available on these matters related to laboratory analytical performance.

Mission Impacts

None. Current work activities involving beryllium at Savannah River Site are bounded under ISMS by the radiological hazards that co-exist where beryllium exposures could be associated with an activity, with rare exceptions. Should a protocol and its link into exposure assessments be promulgated, there will be some impact. Most wipe sampling work by industrial hygienists and radiological control inspectors deals with investigation of non radiological work environments to determine compliance with the inventory of legacy areas burden within the rule. Should an activity be conducted in a defined beryllium legacy area, work planning controls are already implemented to maintain exposures as low as practical.

Cost Impacts

If a wipe sampling protocol was established as a compliance burden, then our organization would return to the original and master listing of all beryllium data maintained at SRS. That listing is currently 6 activities (each space where conducted would now require this survey method at the times and for the reasons that may be laid out in the revision to the regulation), resulting in potentially 6 times 59 numbers of samples per our current procedure (total of 354). In addition, the legacy listing includes 46 spaces that were formerly considered to contain legacy contamination. Of these, only 5 remain on the list, as 7 spaces have been lost to demolition conduct and 34 have been cleared through sampling protocols. Should each of the remaining legacy spaces have to be reexamined under a requirement for surface sampling to serve exposure assessments, then assuming a minimum of 59 samples per space would result in (39 times 59 =2301). Rad samples cost approximately $300 each, with clean samples at approximately $60 each. Total could be $138,060 for clean, and $17,700 for contaminated samples. Grand total of $155,760 in analytical cost alone.

Question 6

What is the best method for sampling and analyzing inhalable beryllium?

SRNS does not believe that there is sufficient information to provide an adequate answer to this question.

The term “best” is highly subjective but should consider cost as well as efficacy. In the absence of a simple method of collection and analysis for inhalable particle size, and confounded by the radiological hazards that exist at Savannah River Site with both current and forecast beryllium activities, our best method is to collect high volume samples and do surveillance looking for ANY airborne beryllium.

Mission Impacts

Unknown.

Cost Impacts

Unknown

QUESTION 7

How should total fraction exposure data be compared to inhalable fraction exposure measurements?

SRNS believes that total fraction exposure data should NOT be compared to inhalable fraction exposure measurements without understanding factors (e.g. particle size, workplace factors) that may influence variations in exposure data.

Mission Impacts

None as SRS has not identified any positive air sampling data above the action level.

Cost Impacts

Unknown.

QUESTION 8

Part A:

Should surface area action levels be established, or should DOE consider controlling the health risk of surface levels by establishing a low airborne action level that precludes beryllium settling out on surfaces, and administrative controls that prevent the buildup of beryllium on surfaces?

SRNS believes that DOE should not establish a surface action level and should not seek to control the health risk of surface levels by establishing a low airborne action level that precludes beryllium settling out on surfaces. This position is stated because there is no clear relationship between surface contamination and an airborne fraction, and in turn that relationship causing a health consequence of Chronic Beryllium Disease.

Part B:

If surface area limits are established, what should be the DOE surface area action levels?

SRNS is not in a position to appropriately answer this question because we do not see a premise in the relationship of surface contamination levels with airborne concentrations. However, any such level should have a technical basis. In addition, it should be clearly stated that its use is restricted to legacy area maintenance or clearance, and to current activities approved by DOE.

Part C:

If a low airborne action level should be established in lieu of the surface area action level, what should that airborne action level be?

SRNS believes that we are not in a position to appropriately answer this question, because we do not see a premise in the relationship of surface contamination levels with airborne concentrations.

Part D:

What, if any, additional administrative controls to prevent the buildup on surfaces should be established?

SRNS believes that we are not in a position nor has sufficient information been provided to appropriately answer this question. Please refer to the "additional considerations" section at the end of this document.

Mission Impacts

Unknown.

Cost Impacts

Unknown

QUESTION 9

Should warning labels be required for the transfer, to either (1) another DOE entity or (2) to an entity to whom this rule does not apply, of items with surface area that are free of removable surface levels of beryllium but which may contain surface contamination that is inaccessible or has been sealed with hard –to-remove substances for example paint?

SRNS believes that warning labels are appropriate where reasonable expectations are that handlers could be exposed during the handling of an item (for example servicing a seldom-accessed part or opening a waste container), or to warn the uninformed so as to prevent unplanned beryllium exposures.

Mission Impacts

Currently contractor performance is measured by the DOE at the local office in our contributions back to the community. Under the proposed labeling within this RFI, no reasonable contractor would be willing to risk the liability of releasing a beryllium bearing item to "an entity to whom this rule does not apply"

Cost Impacts

Costs are minimal, as assignment of labels occurs as part of waste packaging activity. When transfer is commenced, the container is most often directed to holding in our Solid Waste facility for burial. Most of our current DOE approved activities deal with repackaging of Transuranic Wastes destined for WIPP. SRS confirmed that WIPP undergoes no physical opening of any containers in its work.

QUESTION 10

Should the Department establish both surface level and aggressive air sampling criteria for releasing areas in a facility, or should the Department consider establishing only the aggressive air sampling criteria?

SRNS believes that DOE should not utilize a surface level and/or an aggressive air sampling criteria to release an area or facility. Instead, DOE should consider a requirement for site specific criteria development, based on a statistically-based sampling plan for surface characterization, and a quantitative

measure of releasable surface contamination. Such an approach would establish a technical basis for the allocation of resources in the protection of the health of the workforce.

Mission Impacts

SRS generally could not accommodate the requirement without significant energies in variances from regulations dealing with radiological contamination. In addition, it would offer NO BENEFIT in health protection, as the areas to be cleared of beryllium contamination have not and will not be cleared in the foreseeable future due to radiological contamination.

Cost Impacts

Unknown