

Weldon Spring Site SEC-00143

Working group:

Michael H. Gibson-Chair

Richard A. Lemen, Ph.D., M.S.P.H.

James Melius

WS WG Meetings

- 19 Oct 2010: WS 1st WG meeting
- 25 Jan 2011: WS 2nd WG meeting
- 9 May 2011: WS 3rd WG meeting
- 13 Sept 2011: WS 4th WG meeting
- 29 Nov 2011: WS 5th WG meeting by phone
- 7 Dec 2011: AB meeting discussion
- 14 Feb 2012: WS 6th WG meeting by phone.

Petitioner's Th-232 Concerns

- 7 Dec 2012: AB meeting – Petitioner referenced several documents that might indicate Th-232 was processed in large quantities before 1963.
- 22 Feb 2012: NIOSH issued response and found no additional indications that Th-232 was processed in large quantities before 1963.

Summary of SEC Issues for 1957-1967

1. Accuracy and completeness of internal data (1a), external dose data (1c), air data (1b), and coworker data (1d).
2. Lack of egress monitoring.
3. Lack of dose records for 1967.
4. No radon/thoron measurements.

SEC issues (continued)

5. Validity of method used to assign recycled uranium intakes.
6. Lack of neutron dose data.
7. Lack of air measurements at quarry and raffinate pits during 1957-1967.
8. Impact of accidents/incidents on dose reconstruction.
9. Geometry/extremity correction factors.

Site Profile Issues

- There were 28 site profile issues identified.
- These site profile issues have been incorporated into the SEC issues, or have been addressed and closed, or are being addressed by changes in the WS TBD and PERs.
- SC&A tracked the site profile issues along with the SEC issues.

SEC Issues

- All SEC issues were addressed in the WG meetings and closed, except the following:
 - **#1b - Thorium air data DWE error analyses**
 - **#4 - No radon/thoron measurements**

Status of Pending SEC Issues

#1b Thorium air data DWE error analyses:

- No thorium bioassay data (1966 chest counts not used).
- Gross-alpha activity air samples available.
- Assume 100% thorium activity.
- Original calculational and transcriptional error analyzed.
- These errors are called “blunders” in the scientific literature. They are not gross mistakes, but common errors).

SEC Issue 1b Air Data (continued)

- Need to determine impact of errors on derived daily weighted average (DWA) air concentrations.
- 9/07/2011: NIOSH issued white page addressing DWA errors.
- 9/27/2011: SC&A issued response to NIOSH's recent paper. SC&A recommended:
 - DR implementation method be provided
 - The representativeness of the limited data be addressed.

SEC Issue 1b Air Data (continued)

- 11/28/2011: NIOSH issued revised white page addressing DWA errors with DR implementation recommendations.
- 11/29/2011: DWA errors discussed at WS WG meeting.
- 11/29/2011: SC&A tasked with analyses of NIOSH's revised DWE paper.
- 1/17/2012: SC&A issued revised white page addressing DWA errors and DR implementation recommendations.

SEC Issue 1b Air Data (continued)

- 2/12/2012: DWE error issue discussed during WG meeting and SC&A to issue summary response.
- 2/21/2012: SC&A drafted summary response:
 - Type and magnitude of errors similar to other studies and at Fernald.
 - Corrections are applicable to DR.
 - Quantity of representative data for thorium DWE error analyses limited, but additions resources would not have significant impact.

Status of Pending SEC Issues

#4. No radon/thoron measurements:

- NIOSH performed analyses of potential environmental and indoor radon/thoron intakes and issued response on 4/21/2011.
- SC&A evaluated recommended model and found it to bound the potential intakes.
- The WS radon model is more conservative than previously proposed DOE site radon models in that it does not include any loss of radon/thoron through ventilation.
- ***WG recommends discussion with AB.***

Summary of WS SEC

- WS WG, NIOSH, and SC&A have been actively working on SEC (and site profile) issues during the last several years.
- 9 SEC issues and 28 Site Profile issues have been addressed except for the **use of radon/thoron model.**