

TBD-6000 Work Group

Report on SEC Petition 00105 for General Steel Industries

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Time Line for Sources at GSI

- Jan. 1, 1953: Beginning of Operational Period
- Mar. 7, 1962: Original AEC license application
- June 30, 1966: End of Operational Period
- July 1, 1966 – December 31, 1992: Residual Period
- Jan. 1, 1993 – Dec. 31, 1993: DOE Clean-up Period

Board Action at June 2012 Meeting

- The Work Group recommended that the Board not take action on SEC Petition 00105, but rather defer action until the next full Board meeting.
- This recommendation resulted from WG discussions on June 14, 2012 relating to the residual period and the desire of the Work Group to confirm the appropriateness of the use of the TBD-6000 model of a uranium slug facility as a surrogate for the handling of uranium at General Steel Industries. This applies both to the operational period as well as to the residual period.
- The Board accepted this recommendation and tasked SC&A to review the SD issue.

SC&A Findings Reported to WG on August 28, 2012

- SD Criterion on Hierarchy of Data: “...the use of surrogate data does not strictly conform to the hierarchy of data.” Also, “appropriate adjustments were not made to these surrogate data.”
- SD Criterion on Exclusivity Constraints: “We do not agree that the use of the surrogate data was stringently justified.”
- SD Criterion on Process Similarities:
 - “...the use of slug stamping as a surrogate for the handling of uranium at GSI does not fulfill Criterion 3.”
 - “Alternate sources of surrogate data (e.g., the 124 work sites for which NIOSH has collected information) were not evaluated.”

SC&A Findings Reported to WG on August 28, 2012 (continued)

- SD Criterion on Temporal Considerations:
“...need to justify the application of this measurement to the entire period of operations at GSI.”

Note: SC&A later concurred with the NIOSH justification in the NIOSH response.

SC&A Findings Reported to WG on August 28, 2012 (continued)

- SD Criterion on Plausibility:
 - Scientific Plausibility: “...the assumption, that the deposition abruptly stops at the end of the operation, is neither plausible nor claimant favorable.”
 - Workplace Plausibility: “...the calculation of uranium concentrations described by Allen and Glover does not meet the criterion of workplace plausibility.”

SC&A Recommendation

- Recommended that NIOSH develop a methodology for estimating uranium intakes at GSI that does not rely on surrogate data
- Suggested a model that uses the exponential source-term depletion rate recommended in OTIB-0070. For this approach, the contamination levels on the floor of the Old Betatron Building at the time of the 1993 cleanup, together with the depletion rate and varying hours of uranium handling operations at GSI, could be used to calculate average surface uranium concentrations.

Other Information of Importance

- The co-petitioner provided documentation that the GSI facilities were cleaned and pressure-washed during three different time periods (1978-1981, 1984, and post-1985), all of which predated the 1993 reference date for the proposed surface contamination level.
- The WG agreed the back-calculating surface contamination levels from the 1993 contamination data had to be ruled out.

Further Considerations

- NIOSH provided its responses as to why it believed the surrogate data criteria were met reasonable well by the handling of uranium slugs.
- Both NIOSH and SC&A felt that it would make sense to review the other data sets involving uranium metal handling to ascertain whether there was “better” surrogate for the GSI situation.

NIOSH and Petitioner Responses to SG Issue

- NIOSH will review their position on the Surrogate Data matter and indicate how they propose to proceed to address this matter and come to closure on the GSI SEC Petition.
- The Co-Petitioners will provide their comments on these issues and any related matters.

Work Group Recommendation

- The Work Group agreed to report this information to the Board without a specific recommendation.
- The Board can choose to ask NIOSH to examine possible alternate surrogate data sets (followed by SC&A review), or it can choose to act on the SEC petition on the basis of the information currently on hand.