



Savannah River Site SEC (1991–2007): Update

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Advisory Board on Radiation and Worker Health

December 5, 2024



Savannah River Site (SRS) status: SEC-00103 review 1 of 2

- ◆ **July 12, 2021:** Board recommendation of SEC class for subcontractors, 1972–1990 (Oct. 12, 2021: *Federal Register* designation date) (ABRWH, 2021)
- ◆ **April 22, 2022:** SC&A issued “Focused Review of ORAUT-RPRT-0092, Revision 00, and Remaining Petition SEC-00103 Evaluation Report Period: 1991–2007” (SC&A, 2022)
- ◆ **Jan. 5, 2023:** NIOSH issued response to SC&A’s focused review (ORAUT, 2022) in January 2023 to the Board
- ◆ **March 22, 2023:** SRS Work Group met via teleconference (ABRWH, 2023)
- ◆ **Sept. 25, 2024:** SRS Work Group met via teleconference (ABRWH, 2024)

Savannah River Site (SRS) status: SEC-00103

review 2 of 2

- ◆ **Dec. 2023–June 2024:** NIOSH and SC&A exchange reviews:
 - NIOSH (2023): “Analysis of SRS TRACK database”
 - SC&A (2023): “Review of NIOSH’s response to SC&A’s focused review of ORAUT-RPRT-0092, 1991–2007”
 - NIOSH (2024a): “Analysis of Subcontractor CTW Data at SRS 1991 to 2007”
 - NIOSH (2024b): “Response to ‘SC&A Evaluation of Feasibility and Utility of Subcontractor Exposure Potential’”
 - NIOSH (2024c): “Response to ‘Review of NIOSH’s Response to SC&A’s Focused Review of ORAUT-0092, 1991–2007’”

Designated SEC, 1972–1990

- ◆ ABRWH recommendation letter, July 12, 2021 (ABRWH, 2021):
 - “All construction trade employees of Department of Energy subcontractors [excluding employees of the following prime contractors who worked at the Savannah River Site in Aiken, South Carolina, during the specified time periods: E. I. du Pont de Nemours and Company, October 1, 1972, through March 31, 1989; and Westinghouse Savannah River Company [WSRC], April 1, 1989 through December 31, 1990], who worked at the Savannah River Site from October 1, 1972 through December 31, 1990, for a number of work days aggregating at least 250 work days, occurring either solely under this employment or in combination with work days within the parameters established for one or more other classes of employees included in the Special Exposure Cohort.”

ABRWH SEC basis (1972–1990)

- ◆ ABRWH recommendation letter, July 12, 2021 (ABRWH, 2021):
 - “Subcontractor construction trades workers [CTWs] conducted a broad range of work activities... They may have worked in high-contamination and high-airborne radioactivity areas and may have been utilized for short-term high-exposure work tasks.”
 - “Subcontractor [CTWs] may have been ‘transient’ and not have worked for long periods at SRS and also may have been intermittently tasked with nonroutine radiological jobs under work permits, and thus were not likely enrolled in the routine (including termination) bioassay monitoring program.”

ABRWH SEC finding (1972–1990)

- ◆ ABRWH recommendation letter, July 12, 2021 (ABRWH, 2021):
 - “The Board finds there to **be insufficient information, including a lack of job-specific radio-bioassay monitoring data for subcontractor construction trades workers, and assurance of workplace monitoring and source term data**, to enable NIOSH to estimate with sufficient accuracy all potential internal doses from radionuclides associated with fuel handling, reactor operations, fuel reprocessing, and/or research activities, to which the proposed class may have been exposed during the time period in question.”
(emphasis added)

When did information become “sufficient” to enable DR with sufficient accuracy?

- ◆ Remaining SEC period for subcontractor CTWs: 1991–2007
- ◆ In its 2022 focused review (SC&A, 2022), SC&A examined the following information for sufficiency based on prior SEC designation:
 - WSRC Radiological Work Permit (RWP) and job-specific bioassay policies, procedures, and practices, and their implementation (trending numbers, percentages)
 - Assurance of internal monitoring and data completeness (degree to which job-specific bioassays were submitted)
 - Degree of “matching” of radionuclides in RPRT-0092 sampling

NIOSH 2024 updated position: Data completeness

- ◆ NIOSH notes that “original intent” of ORAU-RPRT-0092 was not to determine compliance or completeness, but representativeness. (NIOSH, 2024c; p. 2)
- ◆ “Compliance” cited taken out of context – SC&A (2023) refers to bioassay monitoring data compliance, as noted in follow-on statement: “SC&A analysis was only to indicate areas of compliance, or noncompliance, of subCTW bioassay data to provide markers to aid in an evaluation of the adequacy of the subCTW bioassay data.” (SC&A, 2023; p. 10 of 33)
- ◆ Data completeness and representativeness are two sides of same coin in IG-006. Board review of RPRT-0092 has addressed **both** given RPRT-0092 original “chief conclusion” that “a large percentage of subCTWs were monitored for potential intakes while working under a Job Plan, SWP or RWP.” (ORAUT, 2019; p. 59). The incompleteness of job-specific bioassays required under job plans and RWPs, and lack of RWPs, undermined representativeness of dose reconstruction for subCTWs in 1972–1990.
- ◆ This issue already adjudicated by Board in its review of subCTW bioassay monitoring data for 1972–1990 and issuance of SEC class for that period.

NIOSH 2024 updated position: Job-specific sampling

- ◆ NIOSH maintains that “job-specific samples were used for normal operations as part of the routine sampling program (i.e., not special samples) and were utilized primarily as a means of efficiency to add workers to the routine bioassay program in the field.” (NIOSH, 2024c; p. 2 of 7). That SRS procedures for job-specific bioassay monitoring in 1995–1996 were “confusing.” (NIOSH, 2024c; p. 5)
- ◆ SC&A finds SRS requirements explicit and clear. SRS 5Q1.1-506 directed at potential “non-routine” radiological hazards, not already covered by the prescheduled routine program. “Special” samples covered in a different SRS requirement.
- ◆ Policies and documentation for job-specific bioassay practice cited by NIOSH’s presentation date from 1997 and after; do not supersede contemporary policies (i.e., 5Q1.1-506) in place for 1991–1996.
- ◆ “Job-specific bioassay is a program prescribed in response to a specific event (the job) but is not a special bioassay.” (ORAUT, 2017; p. 9 of 32)
- ◆ This issue already adjudicated by Board in its review of subCTW bioassay monitoring data for 1972–1990 and issuance of SEC class for that period.

NIOSH 2024 updated position: SRS self-assessments

- ◆ NIOSH diminishes significance of 1997 self-assessment finding of 79% non-compliance for returned job-specific bioassays given relatively small proportion represented by those bioassays compared with overall routine bioassay program. Claims it is “often used by SC&A as evidence of widespread non-compliance...” (NIOSH, 2024c; p. 5 of 7)
- ◆ SC&A continues to disagree with NIOSH’s characterization. The 1997 self-assessment and related Notice of Violation were originally cited in SC&A’s 2017 review as a compelling reason to conduct further assessment regarding the completeness and representativeness of such data, which led to RPRT-0092, an SEC class for 1972–1990, and this ongoing Board review.
- ◆ This issue already adjudicated by Board in its review of subCTW bioassay monitoring data for 1972–1990 and issuance of SEC class for that period.

NIOSH 2024 updated position: TRACK database

- ◆ TRACK database obtained, provided to Work Group in June 2023
- ◆ SC&A conclusions regarding TRACK database:
 - Follow-up internal monitoring (i.e., bioassay) was specified in approximately two-thirds of the incident entries
 - Notable downward trend in entries from 1994–1996, though a significant spike in 1997
 - Comparison of TRACK database entries with electronic bioassay database showed between 94.5% (trivalent actinides) and 99.7% (plutonium) monitored within a year
 - Majority positive bioassay results identified in the electronic bioassay database were reflected in a TRACK entry (table C-3, SC&A, 2023)
- ◆ TRACK database would not reflect internal exposure potential to subcontractors who were not routinely monitored or did not submit required job-specific bioassay

NIOSH updated position: Comparison of subCTW to other workers

- ◆ NIOSH compares bioassay data from subCTWs to other SRS workers, 1991–2007; concludes subCTW results do not tend to be higher than other workers.
- ◆ NIOSH concludes no evidence that “subCTWs were among the most highly exposed workers at SRS.” (NIOSH, 2024a)
- ◆ Distinction lies in that subCTWs were often transient, not rigorously bioassayed (79% not collected in 1996, 2nd quarter), not given termination bioassays upon site departure, and accounts of subCTWs being given “dirty” rad jobs (NIOSH, 2017).
- ◆ Determinative question under EEOICPA is data representativeness and completeness

Summary status of SEC issues

- ◆ Based on SEC designation for prior years (1972–1990), SC&A’s position remains that acceptable co-exposure models for subcontractor CTWs can be developed for post-1990 when both:
 1. RWP-required, job-specific bioassay data are shown to be sufficiently complete and representative for subcontractor CTWs.
 2. Evidence of program adequacy is available to show WSRC assured required bioassays were performed and submitted.
- ◆ SC&A conclusion 5 acknowledges that an SEC cutoff date for “sufficiency of information” to support co-exposure model development needs to balance the two above considerations, upon which the existing SEC designation is based for 1972–1990.

SC&A conclusions

- ◆ Most recent NIOSH findings have either been already adjudicated by the Board in previous SEC review (data completeness vs representativeness, 1997 self-assessment, job-specific bioassays) or are not relevant to judgment on cutoff timeframe for SEC (TRACK database).
- ◆ Judgment needed regarding cutoff date on issue of completeness and representativeness of RWP-directed job-specific bioassay data for 1990–1997 — can be based on RWP bioassay data completeness/representativeness and program implementation.

Possible SEC “cutoff” dates for sufficiency of job-specific bioassay data and program assurance (SC&A, 2022)

- ◆ 1991: NIOSH finds field procedures changed to require notifications for suspected intakes
- ◆ 1992: RWPs required by WSRC procedure, includes job-specific bioassays
 - RWP-specified bioassay = 0%, direct monitoring (DM) = 91%, effective monitoring (EM) = 96%
- ◆ 1994: SC&A finds listing of required bioassays on RWPs exceeds 60%; required listing of target radionuclides
 - RWP = 63%, DM = 73%, EM = 90%
- ◆ 1996: Last year for which job-specific bioassays not verified as complete by WSRC (responding to 1997 self-assessment)
 - RWP = 85%, DM = 75%, EM = 83%
- ◆ While the trend lines for DM and EM metrics are uneven, the upward trend for inclusion of bioassay requirements in RWPs is apparent and steady

Work Group discussion: Possible SEC cutoff dates

- ◆ Discussion centered on reconciling two “extremes”: NIOSH’s contention it can do co-exposure model for 1991 (and beyond) versus 1996, when 100% resampling established data completeness for job-specific bioassays. (ABRWH, 2024; pp. 124–129)
- ◆ Recognizing major program “transition” that took place at SRS and “uncertainty” involved, Work Group discussed need for professional judgment based on “public policy” and available scientific data. Agreement reached on December 31, 1992, SEC cutoff date. (ABRWH, 2024; pp. 128–131)



Questions?

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