

# Savannah River Site (SRS) Work Group

Meeting of the Advisory Board on Radiation and Worker Health

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# SRS Status: Special Exposure Cohort (SEC) Petition SEC-00103

- **July 12, 2021:** Advisory Board on Radiation and Worker Health (Board) recommends SEC class for subcontractors, 1972–1990.
- **2022–2025:** SRS work group deliberates on Evaluation Report period, 1990–2007, regarding subcontractors. Series of National Institute for Occupational Safety and Health (NIOSH) and SC&A reviews and responses provided and discussed.
- **December 5, 2024:** Board discussed status of SRS Work Group deliberations and potential recommendations.
- **March 17, 2026:** SRS Work Group agrees to recommend full Board consideration of SEC for subcontractors at SRS within 1991–2007.
- **Still under consideration:** Work Group review of prime contractor employees addressed by the SEC-00103 evaluation report.

# Subcontractor construction trades workers (SubCTWs) with job-specific bioassays involving non-routine exposures inadequately represented

- DCAS-IG-006 calls for relevant data to be complete and representative to support a co-exposure model.
- While some missing data is expected, it cannot be so extensive as to render a dose distribution unrepresentative of the worker population being evaluated.
- Subcontractors with radiological work permit (RWP)-directed, job-specific bioassays are such a case for SRS until at least the early 1990s.
- NIOSH noted in 2017 that contemporary interviews indicated intermittent higher exposure situations for subcontractors (NIOSH, 2017).
- RWP-directed, job-specific bioassays were lacking during the early 1990s due to program inadequacies:
  - No job-specific bioassay procedure until 1992, and
  - Non-collection of job-specific bioassays repeatedly cited in oversight findings throughout 1990s.
- Comparing exposures of subCTWs with routine bioassays to those doing specialized rad jobs under permits involving non-routine bioassays is *not* comparing “apples to apples.”
- The data for routine are plentiful; the data for job-specific are largely lacking or inadequate for co-exposure modeling.

# Level of exposure for subCTWs performing non-routine work cannot be characterized

- NIOSH claims that exposure levels for SRS subcontractors compare favorably to production workers
- Issue is the representation of non-routine radiological work under a permit requiring job-specific bioassays. How can one compare data that were not actually collected?
- There was a program failure to collect such bioassay samples due to:
  - Non-adherence to RWP requirements until 1990, with Westinghouse Savannah River Company (WSRC) upgrades into 1990s,
  - Lack of RWP and job-specific bioassay procedures until 1992, and
  - Incomplete and inconsistent implementation of bioassay collection until 1998.
- Evaluation of available routine bioassay cannot shed light on uncollected job-specific bioassays.
- While subcontractors can be identified in main dataset, job-specific (non-routine) bioassay cannot be separated out.
- Resampling by WSRC for 1997 job-specific bioassays found no positive intakes, but that is for one year only. Cannot know intakes for preceding years because inadequate records exist.

# Adequacy of SRS job-specific bioassay program timeline summary (1990–1995)

- **1990:** The U.S. Department of Energy (DOE) Tiger Team made the following finding:  
*Employees who fail to leave a scheduled bioassay sample for over 1 month are added to a delinquent list. The list also tabulates those who are 2, 3, and 4 months delinquent. A person who is 5 months delinquent is listed again as being 1 month delinquent. There is a policy to remove people from radiation work if they are 3 months delinquent on a bioassay sample. However, there is no enforcement of this policy and some employees ignore requests for bioassay samples. [DOE, 1990, p. 4-198, PDF p. 535]*
- **1992:** Westinghouse developed a “Radiological Improvement Program” for SRS to upgrade its radiation protection program (notably, new procedures for non-routine radiological hazards, including job-specific bioassays).
- **1994–1995:** Facility Evaluation Board finding of non-submission of tritium bioassay samples.

# Adequacy of SRS job-specific bioassay program timeline summary (1996–1999)

- **1997:** Westinghouse self-assessment found non-submission of 79% of job-specific bioassays during 2nd quarter.
- **1998:** Department of Energy Occurrence Report indicates that problems concerning the job-specific bioassay program had been repetitive and were first identified in November 1995.
- **1999:** With continuing bioassay program problems, WSRC overhauled entire system: “Subcontractor workers are now being tracked administratively and can be kept from performing future site radiological work if they fail to comply with radiological requirements, including failure to provide a termination bioassay sample” (WSRC, 1999, p. 2).

# SEC applicability to SRS subcontractors, 1991–2007: Question 1

Is it feasible to estimate with sufficient accuracy the radiation dose that the class received?

- **For 1972–1990:** “The Board finds there to be insufficient information, including a lack of job-specific radio-bioassay monitoring data for subcontractor construction trade workers, and assurance of workplace monitoring and source term data, to enable NIOSH to estimate with sufficient accuracy all potential internal doses” (Board recommended class to apply to the period 1972–1990).
- **Post-1990:** Job-specific bioassay data continued to be lacking through the early 1990s, as program upgrades were implemented. When would the submission and collection of such data become representative of this class's potential internal exposure?

# SEC applicability to SRS subcontractors, 1991–2007: Question 2

Is there a reasonable likelihood that such radiation dose may have endangered the health of members of the class?

- Potential *non-routine* exposure for subcontractors came from such SRS operational sources as fuel handling, reactor operations, fuel processing, and research activities.
  - These source terms are not negligible nor necessarily comparable to *routine* exposures.
- This is what separates this class: its potential exposure to non-routine source terms that require RWPs and job-specific bioassays to fit the particular radiological hazard present in the workplace.

# 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 by Westinghouse procedure explicitly require inclusion of job-specific bioassays
- **1994:** SC&A finds listing of required bioassays on RWPs exceeds 60% and also required listing of target radionuclides
- **1996:** Last year for which job-specific bioassays not verified as complete by WSRC (responding to 1997 self-assessment)

# SRS Work Group conclusion

- SRS Work Group agrees that a reasonable cutoff date for an SEC class for subcontractors can be based on available monitoring data and improvements to the job-specific bioassay program. The trendline in RWP-required bioassays is clear, as well as program progress in implementing job-specific bioassays.
- On this basis, the Work Group recommends December 31, 1993, for the subcontractor class, providing an extension of the existing SEC to January 1, 1991, through December 31, 1993.
- **Summary:** The full period for the SRS subcontractor class is proposed as October 1, 1972, through December 31, 1993 (i.e., the addition of 3 years).

# Pertinent Background Documents (1 of 4)

Advisory Board on Radiation and Worker Health. (2021, July 12). Letter from H. A. Anderson, III, MD, Chair, to X. Becerra, Secretary, Department of Health and Human Services.

<https://www.cdc.gov/niosh/ocas/pdfs/abrwh/secrecs/bdreccrs-103b-508.pdf>

Advisory Board on Radiation and Worker Health, Savannah River Site Work Group. (2023). *Wednesday, March 22, 2023* [Transcript of teleconference meeting].

<https://www.cdc.gov/niosh/ocas/pdfs/abrwh/2023/wgtr032223-508.pdf>

Advisory Board on Radiation and Worker Health, Savannah River Site Work Group. (2024). *September 25, 2024* [Transcript of the teleconference meeting].

<https://www.cdc.gov/niosh/ocas/pdfs/abrwh/2024/wgtr092524-508.pdf>

National Institute for Occupational Safety and Health. (2017, September 29). *Analysis of DuPont CTWs vs. subcontractor CTWs* [Email memorandum to J. Melius & B. Clawson, Advisory Board on Radiation and Worker Health].

# Pertinent Background Documents (2 of 4)

National Institute for Occupational Safety and Health. (2023, December 1). *Analysis of SRS TRACK database* [White paper]. Site Research Database (SRDB) Ref. ID 200000

National Institute for Occupational Safety and Health. (2024a, March 20). *Analysis of subcontractor CTW data at SRS 1991 to 2007* [White paper].

<https://www.cdc.gov/niosh/ocas/pdfs/dps/dc-srssubctwexp-032024-508.pdf>

National Institute for Occupational Safety and Health. (2024b, March 29). *Response to “SC&A evaluation of feasibility and utility of subcontractor exposure potential comparison”* [Memorandum].

<https://www.cdc.gov/niosh/ocas/pdfs/dps/dc-srssubctwexp-032924-508.pdf>

National Institute for Occupational Safety and Health. (2024c, June 11). *Response to “Review of NIOSH’s response to SC&A’s focused review of ORAUT-RPRT-0092, 1991–2007”* [Memorandum].

<https://www.cdc.gov/niosh/ocas/pdfs/dps/dc-srs-orrprt92-061124-508.pdf>

# Pertinent Background Documents (3 of 4)

Oak Ridge Associated Universities Team. (2017). Documented communication with Tom LaBone on Savannah River Site, October 6, 2017. SRDB Ref. ID 168231

Oak Ridge Associated Universities Team. (2019). *Evaluation of bioassay data for subcontracted construction trade workers at the Savannah River Site* (ORAUT-RPRT-0092, rev. 00).

<https://www.cdc.gov/niosh/ocas/pdfs/orau/oraurpts/or-rprt-92-r0-508.pdf>

Oak Ridge Associated Universities Team. (2022). *Response to SC&A's "Focused review of ORAUT-RPRT-0092, revision 00, and remaining petition SEC-00103 evaluation report period: 1991–2007"* [Response paper].

<https://www.cdc.gov/niosh/ocas/pdfs/dps/dc-orrprt92r0-sec103-508.pdf>

# Pertinent Background Documents (4 of 4)

SC&A, Inc. (2022). *Focused review of ORAUT-RPRT-0092, revision 00, and remaining Petition SEC-00103 evaluation report period: 1991–2007* (SCA-TR-2022-SEC001, rev. 0).

<https://www.cdc.gov/niosh/ocas/pdfs/abrwh/scarpts/sca-srsorrprt92r0sec103-r0-508.pdf>

SC&A, Inc. (2023). *Review of NIOSH's response to SC&A's focused review of ORAUT-RPRT-0092, 1991–2007* [Response paper].

<https://www.cdc.gov/niosh/ocas/pdfs/abrwh/scarpts/sca-orrpt92-r0-508.pdf>

U.S. Department of Energy (DOE). (1990). *Tiger Team assessment of the Savannah River Site* (DOE/EH-0133). SRDB Ref. ID 46767

Westinghouse Savannah River Company. (1999). *Response to the compilation of PAAA internal dosimetry issues* (U) (ESH-HPT-99-0226) [Interoffice memorandum]. SRDB Ref. ID 167676