SEC-00256: NIOSH Position vs. the Evidentiary Record

Decision focus: whether the available evidence affirmatively supports bounding the maximum plausible dose for every relevant period, source, process, and worker group.

BOARD TAKEAWAY

NIOSH has identified data and proposed methods, but the record summarized here still contains unresolved questions about source terms, special tritium compounds, uranium monitoring, air-sampling representativeness, bioassay completeness, and unmonitored workers. The central issue is not whether some records exist; it is whether the evidence is complete and representative enough to bound dose with scientific confidence.

The decision standard

For each acknowledged radionuclide and exposure pathway, the feasibility finding should be traceable through four links:

- Affirmative source-term evidence: form, quantity, activity, location, and period.
- A defensible worker population: who could have been exposed, including unmonitored personnel.
- Representative monitoring: coverage by task, building, year, and exposure condition.
- A validated reconstruction method that bounds the highest plausible dose—not merely the typical dose.

Critical unresolved comparisons

SOURCE-TERM BOUNDING

NIOSH POSITION	NIOSH concludes Pu-238, Pu-239, uranium, thorium, Am-241, special tritium compounds, and other sources can be bounded.
QUALIFYING EVIDENCE	The rebuttals do not necessarily supply complete form, quantity, activity, and monitoring histories for every source.
BOARD QUESTION	**For each source, what affirmative data and method bound maximum plausible dose by period and worker group?**

SPECIAL TRITIUM COMPOUNDS

NIOSH POSITION	General tritium bioassay is considered sufficient, while lingering compound-specific questions were noted.
QUALIFYING EVIDENCE	The January 2026 record acknowledged unresolved special-tritium questions.
BOARD QUESTION	**Which questions remained open, and what later evidence closed each one?**

URANIUM MONITORING

NIOSH POSITION	NIOSH relies principally on its interpretation of uranium source and form.
QUALIFYING EVIDENCE	The public record raised concern that plutonium bioassay was annual while uranium bioassay was absent.
BOARD QUESTION	**What independent evidence shows no uranium operation ever required worker uranium bioassay?**

AIR-DATA COVERAGE

NIOSH POSITION	NIOSH concludes internal dose can be reconstructed for the full period.
QUALIFYING EVIDENCE	NIOSH acknowledges air-sampling data are not comprehensive for the entire plant history.
BOARD QUESTION	**Which years, buildings, radionuclides, and processes lack air data, and what replaces each gap?**

BREATHING-ZONE RELEVANCE

NIOSH POSITION	Onsite tritium air monitoring and environmental data are used for unmonitored workers.
QUALIFYING EVIDENCE	General-area or environmental concentrations may not represent task-level breathing-zone concentrations.
BOARD QUESTION	**What sampler locations, durations, and task relationships establish representativeness?**

UNMONITORED WORKERS

NIOSH POSITION	NIOSH relies on compliance patterns, claims data, interviews, and a 95th-percentile whole-body assignment.
QUALIFYING EVIDENCE	SC&A recommended an appropriate co-exposure model because the tritium bioassay program appeared incomplete.
BOARD QUESTION	**Where is worker-level validation showing the surrogate bounds the highest plausible tritium intake?**

Monitoring completeness and representativeness

Record volume is not population coverage

NIOSH cites more than 20,000 tritium bioassay results from 230 claimants. SC&A noted that this does not establish what fraction of potentially exposed workers or worker-years those individuals represent. For 1988–1990, only 3–10 claimant monitoring records per year were available although plant reports listed 129–201 monitored employees.

Compliance before 1990 remains uncertain

The Tiger Team reported that 70% of required monthly and 35% of required weekly samples were not submitted in 1989. SC&A concluded that compliance before the Tiger Team findings is unknown and that apparent incompleteness may extend through the relevant history.

Enrollment decisions require independent verification

NIOSH relies on supervisors to identify workers with sufficient exposure potential for monitoring. The historical record also documents implementation failures and management pressures. A complete assessment therefore requires verification of enrollment decisions by job, task, and year.

Circular identification must be avoided

Defining potentially exposed workers as those who were monitored assumes the completeness of the monitoring program—the very point in dispute. The worker population should be reconstructed independently from operations, rosters, job assignments, locations, incidents, and maintenance records.

The promised method should be reviewed before reliance

NIOSH committed to explain in a future occupational internal dose TBD how tritium dose will be determined for unmonitored personnel. The feasibility conclusion should be tested against the completed method and independently reviewed historical cases.

What the Board should require before relying on feasibility

1. A radionuclide-by-radionuclide source-term table identifying affirmative bounding data, assumptions, and uncertainty by period and operation.
2. A complete monitored-worker denominator: all potentially exposed workers and worker-years compared with those represented in NOCTS and other recovered records.
3. A building-, year-, process-, and task-specific air-data gap analysis, including evidence that general-area data represent breathing-zone exposure.
4. Independent validation of the method for workers missing required tritium bioassay, including special-tritium-compound cases.
5. A quantitative analysis of missed-sample frequency and distribution before 1990—not an inference from later compliance.
6. SC&A review of the final revised internal dose method before it is used as support for the SEC feasibility determination.

DECISION POINT

A defensible feasibility finding requires an evidence chain that remains valid at its weakest link. Until the source-term, worker-population, monitoring, and validation questions above are affirmatively resolved, the record does not demonstrate—solely by the existence of data—that maximum plausible dose can be bounded for the entire proposed class.

KEY RECORD: NIOSH Weight-of-Evidence Response, pp. 20–21; 2026 Pinellas Work Group Transcript, pp. 59, 69–70; NIOSH Evaluation Report, Rev. 0, pp. 6, 21, 42–45, 60–64; SC&A Supplemental Review, p. 12; SC&A Interim Review (2023), pp. 35–39; Tiger Team 1989 tritium-sample compliance findings.