



# SEC-00219: Idaho National Laboratory – Chemical Processing Plant – Verification and Validation of Class Definition (1963–1970)

Presented by:  
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Meeting of the Advisory Board on Radiation and Worker Health  
Pittsburgh, PA  
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# Introduction and Background SEC Petition-00219

- July 23, 2015: NIOSH releases Revision 1 of the SEC-00219 Evaluation Report regarding dose reconstruction feasibility at the Chemical Processing Plant (CPP) for the period from 1963–1974. (Revision 02 of the SEC-00219 ER was released in February 2017 with the class definition remaining unchanged.)
- Revised class definition effectively split into two periods:
  - January 1, 1963–February 28, 1970
  - March 1, 1970–December 31, 1974
- Revised class definition:

*“All employees of the Department of Energy, its predecessor agencies, and their contractors and subcontractors who worked at the Idaho National Laboratory (INL) in Scoville, Idaho, and **(a) who were monitored for external radiation at the Idaho Chemical Processing Plant (CPP) (e.g., at least one film badge or TLD dosimeter from CPP) between January 1, 1963 and February 28, 1970;** or (b) who were monitored for external radiation at INL (e.g., at least one film badge or TLD dosimeter) between March 1, 1970 and December 31, 1974 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 in the Special Exposure Cohort.” [Emphasis added.]*

# Introduction and Background SEC Petition-00219 (cont.)

- March 24, 2016: Advisory Board recommended acceptance of the second part of the class definition (March 1, 1970–December 31, 1974), which only required evidence of external monitoring at INL.
- Concerns remained regarding the requirement of external monitoring specific to CPP for the first part of the class definition.
- Preliminary investigations determined that temporary/visitor badges were not appropriately attributed to the energy employees (EEs) and were not included in the individual dosimetry files.
- INL/DOE began a significant coding effort to migrate the temporary/visitor badge information into the INL Dosimetry Index.
  - Once the badges were appropriately coded and indexed, they should be correctly attributed to each individual EE.
  - If individual claimant dosimetry files are now complete, then SEC determinations based on CPP-specific external monitoring should not inadvertently omit a qualifying claim.

## Introduction and Background SEC Petition-00219 (cont.)

- INL/ANL-W Work Group concerns remained about the implementation and effectiveness of the coding and indexing effort of the temporary badges/visitor cards.
- Visitor cards are handwritten on small index cards (roughly the area of a matchbook), which might pose the following potential issues:
  - Legibility issues with original cards
  - Name misspellings or variations (e.g., use of nicknames or middle initials used in place of first initial)
  - Human error during the transfer of information to the INL Dosimetry Indexing system

# Introduction and Background SEC Petition-00219 (cont.)

<b>VISITOR EXCHANGE</b>	
CPE AREA	
<b>NOAC 20036</b>	
[REDACTED]	
NAME	
[REDACTED]	
[REDACTED]	
REPRESENTING	
10-30-68	1-3-69
ISSUED	EXPIRES
[REDACTED]	
AUTHORIZED BY	
[REDACTED]	
SIGNATURE	

✓

1-10-69

2-8-5

## Introduction and Background SEC Petition-00219 (cont.)

- Work Group tasked SC&A with developing and executing a verification and validation (V&V) study to determine the effectiveness of the coding/indexing effort.
- SC&A delivered its “proof of principle” V&V approach in September 2016, which was discussed during the May 2017 Work Group meeting.
- Full V&V proposal was completed and discussed with the Work Group in August 2017:
  - Full V&V proposal included 228 potential candidates that covered nearly 1,800 temporary badges.
  - Work Group elected to begin the V&V process with the 30 claims categorized by SC&A as most beneficial to the study (larger number of temporary badges, diversity of employers and job types).

## Introduction and Background SEC Petition-00219 (cont.)

- NIOSH began submitting requests to INL for the group of 30 claims during Fall 2017 with the following language included in the request cover letter:

*“This case is part of a group of 30 cases that are being reviewed in order to evaluate a concern raised by the Advisory Board on Radiation Worker Health (ABRWH). Although INL previously provided dosimetry responses for this EE, we are requesting that INL perform a new records search and provide a full radiological record for this EE...”*

*In order to completed [sic] address the ABRWH concern, it would be extremely helpful if the full dosimetry/radiological record were provided”*

- Based on the first few claimant dosimetry records received from DOE, it was evident that indexing/coding process had still not been correctly implemented.
- DOE/INL was notified of the issue and a second records request was made in Spring 2018.

## Introduction and Background SEC Petition-00219 (cont.)

- July 2018: SC&A provided a status evaluation of 18 of 30 claimant dosimetry records that had been provided to date.
  - Evident from 2 of the 18 preliminary evaluations that the indexing/coding system was still not functioning properly:
    - 1 case was missing all 31 identified visitor badges
    - 1 case only contained 6 of 49 identified visitor badges (~12%)
  - NIOSH resubmitted records requests for a third time for these two claims, along with the remaining 12 of 30 claims for which records had not yet been received.
  - Updated dosimetry records for all 30 claims were provided by DOE/INL by mid-October 2018.

## V&V Results for SEC Petition-00219: Overall Results

- 671 total badges were associated with the group of 30 claims (not including potential name variations)
- 634 were correctly included in the updated individual dosimetry files (94.5%)
- 15 of the 30 claims had 100% of their identified visitor badges correctly included in the update dosimetry records
- Update for the two cases resubmitted for the third time:
  - 1 case improved from 0% (0/31 badges included) to 97% (30/31 badges included)
  - 1 case improved from 12% (6/49 badges included) to 96% (47/49 badges included)

# V&V Results for SEC Petition-00219: Name Variations

- SC&A identified potential name variations among 15 of the 30 V&V claimants (51 total badges).
- Only 15 of the 51 identified badges with name variations were found in the updated dosimetry files (29%).
- SC&A also reviewed the updated dosimetry files for name variations that had not been identified by SC&A during formulation of the V&V proposal.
  - Review included records other than CPP temporary badges (e.g., temporary badges from other locations)
  - Additional name variations found for 22 of 30 V&V claims (66 name variations in total)
- Name variations identified include examples of temporary badges with identical name variations in which some were correctly included and others were incorrectly excluded.

## SC&A Summary Conclusions

- 94.5% (634/671) identified badges were correctly included in the updated dosimetry file (observed name variations not included).
- The average among the 30 V&V claims was 94.3% of identified badges correctly included.
- 15 of 30 V&V claims had 100% inclusion of identified temporary badges.
- Two identified cases with significant issues identified in July 2018 improved from 12% to 96% and 0% to 97%.
- Separate analysis of name variations identified by SC&A showed that 29.4% (15 of 51 temporary badges) were included in updated dosimetry file.
- 66 additional name variations not identified by SC&A (covering 21 of 30 V&V claims) were found in the updated dosimetry file.
- All 30 V&V cases had at least one CPP badge during the period of interest (1963–February 1970).

## Work Group Recommendations and/or Path Forward

- INL/ANL-W Work Group met via teleconference on March 25, 2019.
- NIOSH determined that early issues with the INL Dosimetry Indexing system implementation were related to staffing turnover at the time and lack of clarity on what was requested rather than a systemic problem.
- Determined that the chance to miss a monitored worker at CPP who also spent 250 days of covered employment inside the facility is “very unlikely.”

## Work Group Recommendations and/or Path Forward

- Work Group recommends the Advisory Board accept part (a) of NIOSH's proposed class definition for SEC-00219:

*“All employees of the Department of Energy, its predecessor agencies, and their contractors and subcontractors who worked at the Idaho National Laboratory (INL) in Scoville, Idaho, and **(a) who were monitored for external radiation at the Idaho Chemical Processing Plant (CPP) (e.g., at least one film badge or TLD dosimeter from CPP) between January 1, 1963 and February 28, 1970;** or (b) who were monitored for external radiation at INL (e.g., at least one film badge or TLD dosimeter) between March 1, 1970 and December 31, 1974 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 in the Special Exposure Cohort.” [Emphasis added.]*

- **Note: Part (b) of the definition has already been accepted.**



# Questions?