

SEC-00238: Idaho National Laboratory – Chemical Processing Plant – Verification and Validation of Class Definition (1975–1980)

Presented by:

Bob Barton, SC&A, Inc.

Draft version presented to the INL/ANL-W Work Group

March 25, 2019

Introduction and Background SEC Petition-00238

- As part of the 83.14 process NIOSH presented SEC-00238 to the Advisory Board on July 20, 2017 for the Chemical Processing Plant (1975 – 1980)
- Proposed 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 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, 1975 and December 31, 1980 for a number of work days aggregating at least 250 work days, occurring 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-00238 (cont.)

- Similar to SEC-00219 for CPP (1963 - 1970) concerns remained about the requirement for CPP specific badging
- SC&A was tasked with reviewing badging practices during the 83.14 period (1975 – 1980) and developing a similar Verification and Validation (V&V) approach as the SEC-00219 evaluation
- SC&A delivered its initial evaluation on February 20, 2018. Specific to the V&V development approach:
 - Finding 1: SC&A located temporary badge reports during the period of interest; however, it is apparent that the currently available records are incomplete. Additional temporary badge reports are likely available at the site but have not been captured due to the focus of previous data capture efforts.
 - Finding 2: Based on a review of the limited available temporary badge reports from 1975 and 1980, workers who accrued zero measured dose and did not have a permanent Health Physics badge indicated in the temporary badge report do not appear to be consistently migrated into the official area exposure reports for CPP.

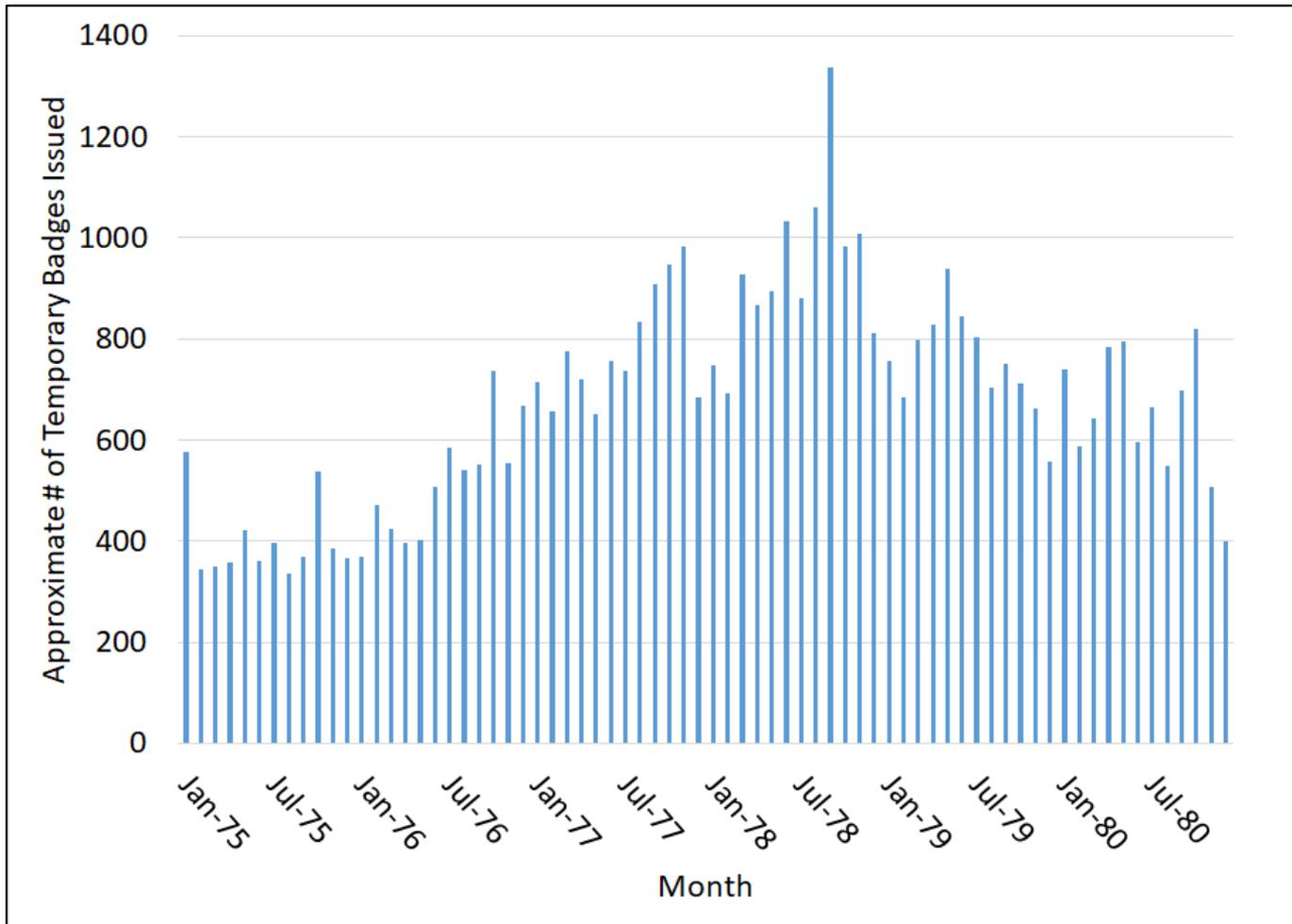
V&V Proposal Development: Captured Records Summary

- September 2018: NIOSH in conjunction with SC&A performed an on-site data capture at INL records facility to assure that temporary badges are available and captured for V&V analysis.
- Records uploaded to SRDB for V&V analysis in late November 2018.
- Temporary badges contained in 705 pdf files that averaged 160 pages each (roughly 80 badges per file)
- Important Characteristic of Temporary Badges:
 - Captured temporary badges almost universally contained an INL security number (S#) during this period
 - S# allows for more exact identification of individual workers (previous evaluated period generally had only the name and employer to use as identifiers).

V&V Proposal Development: Completeness of Captured Temporary Badges

- Documentation has not been identified which tabulates the number of visitor badges issued in a given dosimetry cycle.
- Evaluation of completeness was restricted to looking for temporal gaps in the captured records.
- Number of captured visitor badges counted based on the issue date of the badge.
- Results did not indicate significant temporal gaps though significant fluctuation among months was observed.

V&V Proposal Development: Completeness of Captured Temporary Badges (cont.)



V&V Proposal Development: Claimant Selection

- Method of selecting claimants closely mirrors SEC-00219 V&V Analysis:
 - Diversity of job classification
 - Total number of temporary badges available for V&V
 - Will require a revised dose reconstruction
 - Potential for 250 days of SEC Exposure to be missed if 83.14 temporary badge(s) are not correctly identified*
- 1,100 claims with covered employment during 83.14 period
 - 407 would require a revised dose reconstruction based on the covered illness
 - Nearly 50% of the 407 claims were identified by name in the captured temporary badges

**Note: this characteristic was not considered in SEC-00219 V&V analysis.*

V&V Proposal Development: Claimant Selection (cont.)

- SC&A V&V proposal suggests 30 for updated dosimetry records requests:
 - 30 total claimant dosimetry file requests is consistent with the SEC-00219 analysis
 - 4 of 30 claims fit the final criterion of having significant SEC employment but less than 250 days if the 83.14 badges are missed.
 - Remaining 26 claims were selected based primarily on the total number of visitor badges identified.
 - Job categories included: engineers, administrative personnel, laboratory workers, and various construction trades.
 - 639 total visitor badges identified among the 30 suggested V&V claims.
- 7 additional claims (representing 105 total visitor badges) were evaluated as part of the SEC-00219 V&V analysis (1963 – 1970). Additional claims could be used in this study to replace or augment the 30 suggested claims.

Summary of V&V Proposal

- Review of temporary badges during 83.14 shows that INL security numbers (S#) are available for nearly all badged visitors (not the case during prior time periods) and should improve effectiveness of the INL Dosimetry Index (e.g., resolving name variation uncertainty)
- Site documentation indicating the number of temporary badges issued by period is not currently available for a more accurate completeness analysis.
- Rough tally of temporary badges by month showed no significant temporal gaps which would have indicated a potential completeness deficiency

Summary of V&V Proposal (cont.)

- Nearly 50% of claimants who fit SC&A's criteria for V&V selection were identified by name in the captured temporary badges
- SC&A has identified 30 claims that are suggested for updated dosimetry records requests (639 total temporary badges for V&V analysis).
- 7 additional claims from the prior SEC-00219 V&V analysis are available for evaluation with no additional records requests required (105 total temporary badges for V&V analysis)
- In total, proposed V&V evaluation would cover 37 claimants and 744 individual temporary badges.



Questions?



Work Group Recommendations and/or Path Forward

- TBD