Idaho National Laboratory (INL) Special Exposure Cohort (SEC) Evaluation Report (Rev. 1)

Updated SEC Class Definition

SEC00219

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Overview

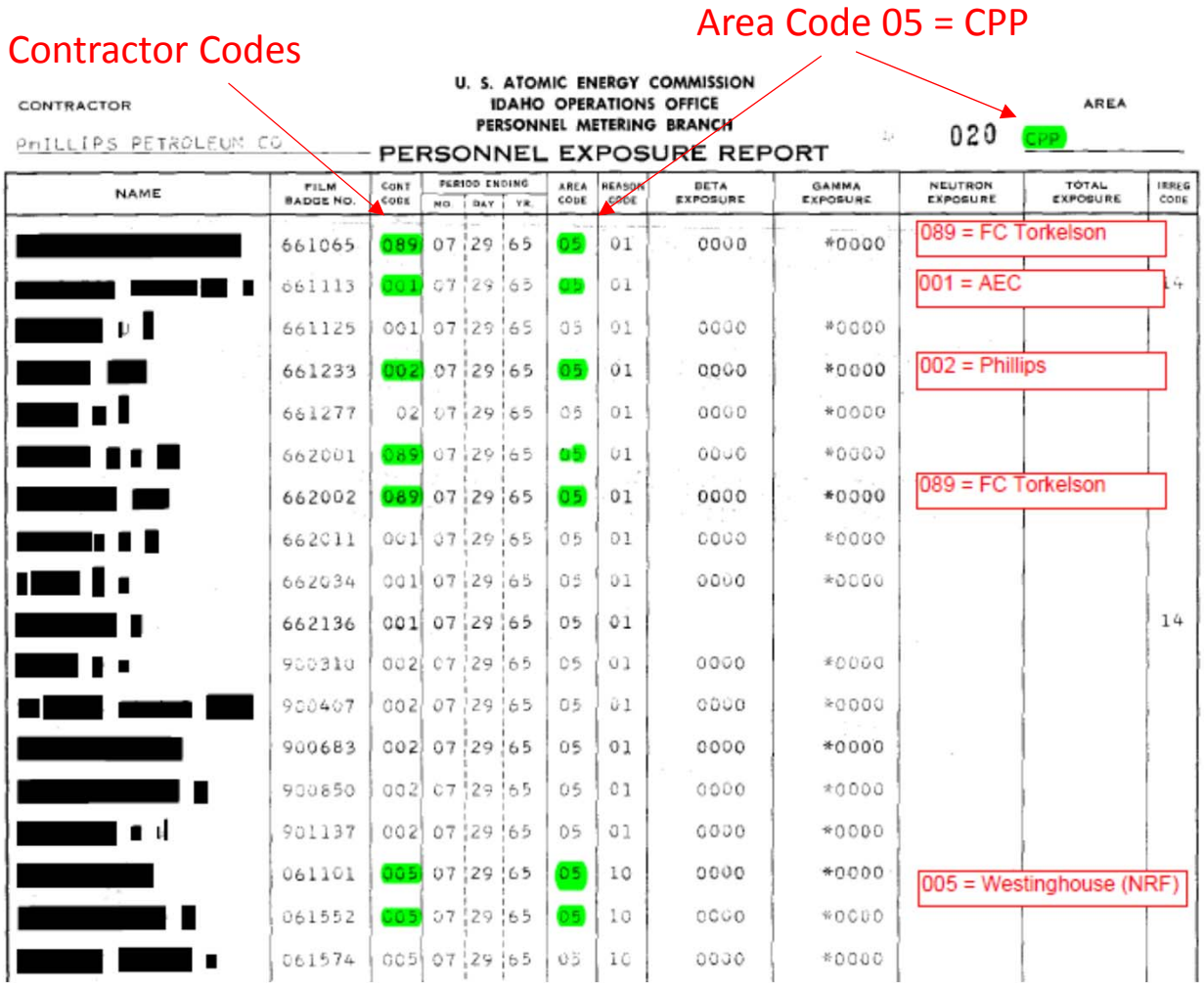
- Background
- NIOSH Additional Research
  - Review of NOCTS Claims
  - Data Gaps
  - Dosimetry Report and Monthly Report Comparison
  - Review of Dosimetry Procedures
- Recommended Adjustment to SEC Class Definition
- INL and ANL-W Activity Proposed Timeline

Background on Dosimetry at INL

- One badge one area methodology
  - If a worker who routinely worked at Materials Test Reactor (MTR) went to the Chemical Processing Plant (CPP), they left their MTR badge at MTR security checkpoint and picked up a temporary badge at CPP
  - Visitors picked up temporary badges upon entrance to CPP
- Dosimetry Records
  - CPP Main Badge Reports (Main codes 5, 53, 55)
  - CPP Temporary Badge Reports
  - CPP Construction (CX) Reports (codes 11, 113, 115)

Example of CPP Dosimeter Badge Report

- Phillips Petroleum
- Atomic Energy Commission (AEC)
- Naval Reactor Facility (NRF)
- Subcontractors
  - FC Torkelson



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Example of CPP Temporary Dosimeter Badge Report

- News Reporter
- Phillips employees
  - other areas
- AEC Personnel
- Construction Trades
  - H.S. Wright
  - FC Torkelson
- Vendors
  - Coca Cola

ID – 100 (R – 4 – 60)

TEMPORARY BADGE REPORT 076

44-13-0

AREA CPP PAGE # 1 REPORT DATE 11-5-65

TEMP. BADGE NO.	NAME	EMPLOYER (SPELL OUT)	DATES USED	PERMANENT BADGE NO.	BETA	GAMMA	NEUTRON
356834	[redacted]	Blackfoot News	11-5-65		0		
356870	[redacted]	Inland Trgan.	11-5-65		0		
356849	[redacted]	Phillips	11-5-65		0		
355530	[redacted]	Phillips	11-1-5-65		0		
356852	[redacted]	Phillips	11-3-65				
35[redacted]	[redacted]	H.S.Wright	11-1-5-65		0		
356865	[redacted]	AEC	11-5-65		0		
356844	[redacted]	Phillips	11-3-5-65	01-0841	9	78	
356875	[redacted]	Wiscomb Co.	11-4-65		0		
355527	[redacted]	Phillips	11-1-5-65		0		
356857	[redacted]	Torkelson	11-4-5-65		0		
356860	[redacted]	Torkelson	11-4-5-65		0		
355545	[redacted]	Phillips	11-1-5-65		0		
355538	[redacted]	Phillips	11-1-5-65		0		
355507	[redacted]	Phillips	10-28/11-5-65		0		
355515	[redacted]	CocaCola	11-1-5-65		0		
356887	[redacted]	H.S.Wright	11-4-65		0		
355519	[redacted]	H.S. Wright	11-3-5-65		0		
356877	[redacted]	AEC	11-5-65		0		
356863	[redacted]	Phillips	11-5-65		0		

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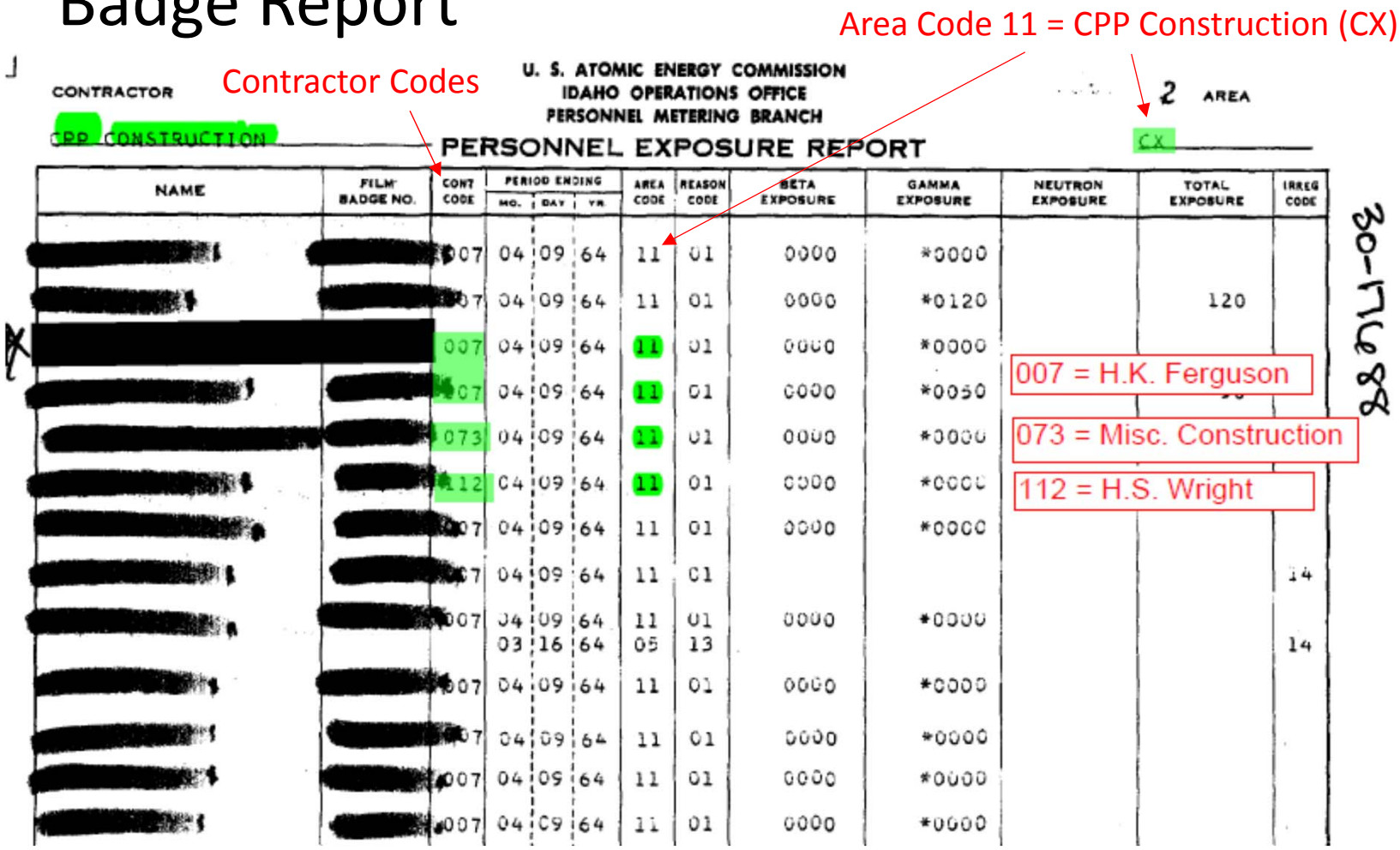
- Example of CPP Construction (CX) Dosimeter Badge Report



NAME	FILM BADGE NO.	CONT CODE	PERIOD ENDING MO.	DAY	YR.	AREA CODE	REASON CODE	BETA EXPOSURE	GAMMA EXPOSURE	NEUTRON EXPOSURE	TOTAL EXPOSURE	IRREG CODE
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0000			
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0120		120	
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0000			
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0050			
[redacted]	[redacted]	073	04	09	64	11	01	0000	*0000			
[redacted]	[redacted]	112	04	09	64	11	01	0000	*0000			
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0000			
[redacted]	[redacted]	007	04	09	64	11	01					14
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0000			
			03	16	64	05	13					14
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0000			
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0000			
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0000			
[redacted]	[redacted]	007	04	09	64	11	01	0000	*0000			

20-1788

NOCTS 9852

Background Summary

- Multiple types of workers were badged upon entry to CPP
- A CPP worker's dosimetry could appear on any one of several reports
  - CPP Main Dosimetry Report (05, 053, 055)
  - CPP Temporary Dosimetry Report
  - CPP Construction (CX) Dosimetry Report (11, 113, 115)

Review of NOCTS Claims

- 1753 INL claims as of April 2015
- Reviewed to determine whether employment period was within the proposed SEC
  - *872 claims (49.7%) did not work during the SEC period*
  - *881 INL Claims with employment during SEC Period*
- Reviewed Computer Assisted Telephone Interview (CATI), Dose Reconstruction Report, and DOE file of the 881 INL claims with employment during SEC to identify CPP workers.
  - *320 claims (36.3%) worked at CPP during SEC period AND had an identifiable CPP badge of some kind (regular, temp, visitor, or CX)*
  - *529 claims (60.1%) had no indication of work at CPP*
  - *32 (3.6%) claims need follow-up to determine status*

Why the need for follow-up

- For Dose Reconstruction efficiency, DOE provided only annual summary information IF:
  - Lifetime External Dose < 500mrem OR > 50 rem
  - Annual summaries do not provide location information
- CPP Construction Trades (CX Dosimetry Printouts)
  - DOE did not send NIOSH these dosimetry reports when we requested the CPP dosimetry records. This was a miscommunication between NIOSH and DOE.
  - NIOSH did not identify that this subgroup was missing until week of June 22nd during our evaluation.
  - NIOSH has since requested these CX reports. DOE is working to compile them.

Review of CPP Dosimetry for Gaps

- CPP Dosimetry Reports (1963-1974)
  - 3 months currently missing – *Will request from DOE*
    - January 1970
    - December 1970
    - December 1971
- Temporary Badge Reports (1959-1976)
  - *None appear to be missing. NIOSH has temporary badge reports for every month between 1959 and 1976.*
- CX Dosimetry Reports
  - *Requested but not yet received from DOE*

Comparisons of Monthly Health Physics Reports vs CPP Dosimetry

- Reviewed the monthly Health Physics reports to determine how many dosimeters the site reported were processed versus how many dosimeters we found in the dosimetry printouts.
- Goal is that if the site indicated that they processed 500 dosimeter badges in a month and we have 500 dosimeter results then we can be fairly sure we have all of the results.
- Reviewed 1963 through March 1970 found very good agreement between monthly reports and dosimetry printouts.

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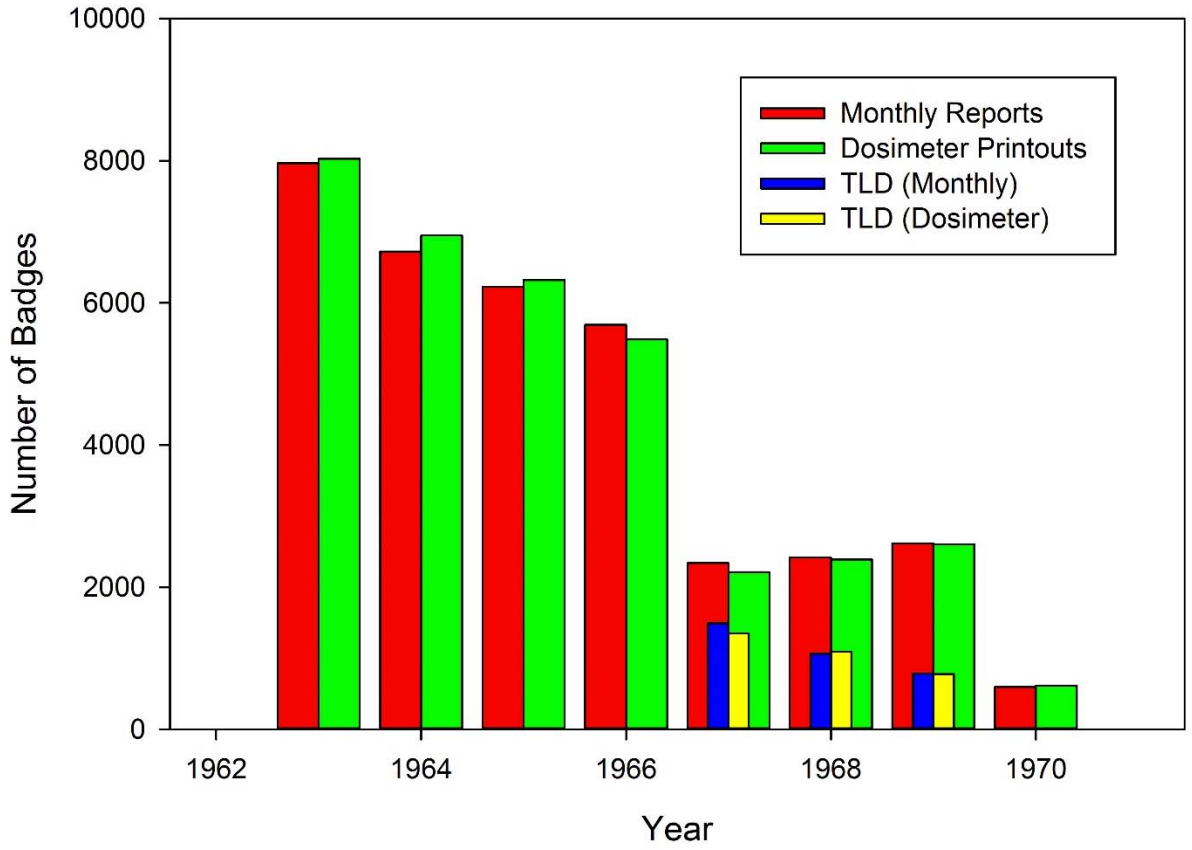
CPP Main Contractor - Annual Comparison



Review of INL Dosimetry Procedures

- One badge one area methodology
  - If a worker who routinely worked at MTR went to CPP they left their MTR badge at MTR security checkpoint and picked up a Temporary Badge at CPP.

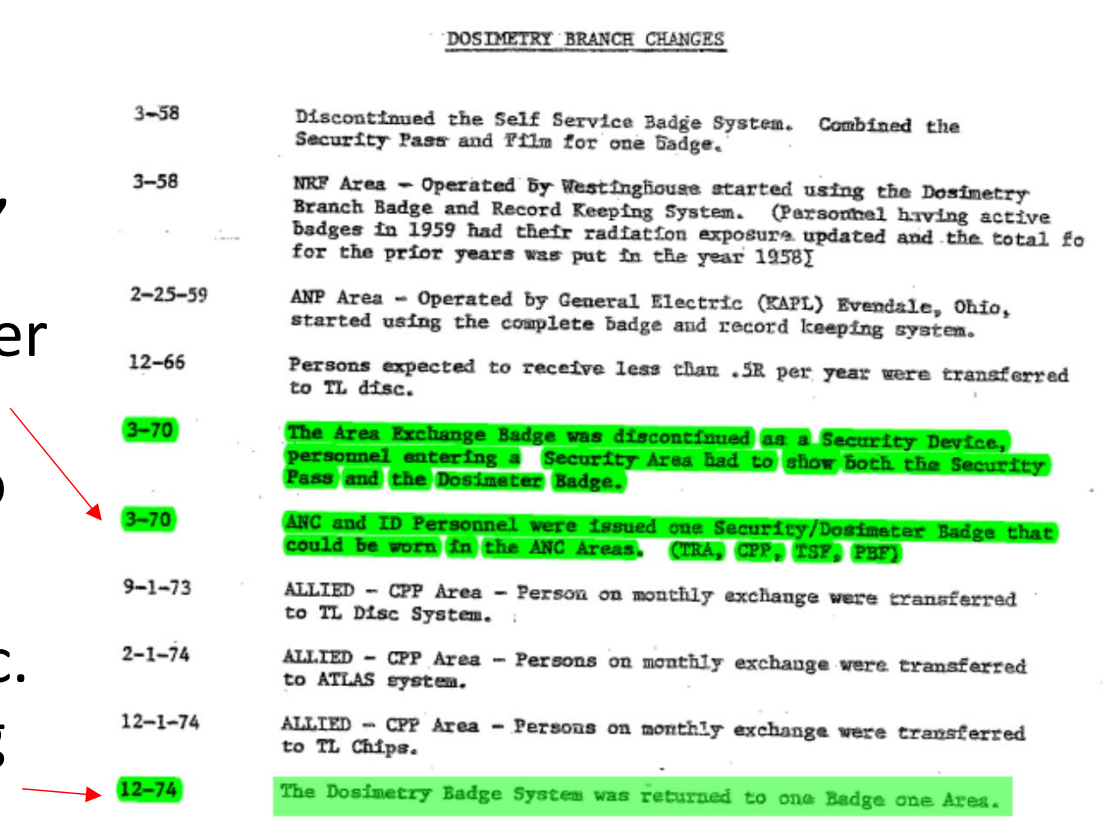
- In October 1969, the INL site began to explore methods to reduce the number of temporary badges being assigned.

Review of INL Dosimetry Procedures

- In December 1969 INL conducted a thorough evaluation of the number of regular badges and number of temporary badges by area and by occupation (operations, trades, etc…) (Site Research Database (SRDB)# 143334 p.28)
- Recommendation was to issue a single dosimeter badge that employees could wear in all areas instead of getting a new temporary badge for each area.
- *New* One Badge Multiple Area methodology implemented in March 1970

Review of INL Dosimetry Procedures

- ANC and AEC personnel who worked in TRA, CPP, TSF, and PBF could wear their dosimeter that was issued in another facility into CPP
- Continued until Dec. 1974 when badging returned to One Badge One Area



DOSIMETRY BRANCH CHANGES

3-58	Discontinued the Self Service Badge System. Combined the Security Pass and Film for one Badge.
3-58	NRF Area - Operated by Westinghouse started using the Dosimetry Branch Badge and Record Keeping System. (Personnel having active badges in 1959 had their radiation exposure updated and the total fo for the prior years was put in the year 1958]
2-25-59	ANP Area - Operated by General Electric (KAPL) Evendale, Ohio, started using the complete badge and record keeping system.
12-66	Persons expected to receive less than .5R per year were transferred to TL disc.
3-70	The Area Exchange Badge was discontinued as a Security Device, personnel entering a Security Area had to show both the Security Pass and the Dosimeter Badge.
3-70	ANC and ID Personnel were issued one Security/Dosimeter Badge that could be worn in the ANC Areas. (TRA, CPP, TSF, PBF)
9-1-73	ALLIED - CPP Area - Person on monthly exchange were transferred to TL Disc System.
2-1-74	ALLIED - CPP Area - Persons on monthly exchange were transferred to ATLAS system.
12-1-74	ALLIED - CPP Area - Persons on monthly exchange were transferred to TL Chips.
12-74	The Dosimetry Badge System was returned to one Badge one Area.

SRDB 8436

Implications of One Badge Multiple Area methodology

- Any monitored worker at INL could physically enter CPP and conduct their work.
- This change eliminates our ability to segregate and identify workers by work areas based on dosimetry records.
- This change necessitates including all monitored INL workers in the SEC class during that time period due to the potential for any monitored worker to have entered the CPP and be internally exposed to actinides that cannot be reconstructed.

SEC Class Identification

- January 1963 through February 1970
  - One Badge One Area methodology
  - CPP Dosimetry can be used as originally proposed

- March 1970 through December 1974
  - One Badge Multiple Area methodology
  - All monitored workers at INL need to be included in the SEC class due to the potential for internal exposure at CPP

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Revised SEC 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.

Idaho SEC Activities – Proposed Timeline

- ANL-W SEC Petition (SEC00224) on schedule to be delivered to the ABRWH in mid to late October 2015
  - Goal is 30 days prior to November Board meeting
- Begin work on reserved sections of INL SEC (SEC00219) (Evaluation Report Addendum) in mid to late October.
  - October & November 2015 - Addendum data captures and interviews if possible and needed
  - February 2016 - SEC Evaluation Report Addendum to petitioners and ABRWH
  - March 2016 - Present SEC Evaluation Report Addendum to ABRWH

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Idaho SEC Activities – Proposed Timeline

- March 2016 work with the ABRWH's INL Workgroup and Sanford Cohen and Associates (SC&A) to resolve findings, issues, and concerns with:
  - INL SEC00219 Evaluation Report
  - ANL-W SEC00224 Evaluation Report
  - INL SEC00219 Evaluation Report Addendum
- March 2016 begin research for CPP for the post 1974 time period

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Questions?