

SC&A Evaluation of CPP Class Definition Requiring Evidence of External Dosimetry (1963–1974)

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Contractor to:

**Advisory Board on Radiation and Worker Health/ABRWH
Centers For Disease Control and Prevention**

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Background Reports and Documents

- March 12, 2015: NIOSH releases the Petition Evaluation Report (PER) for SEC-00219 Rev. 00, Idaho National Laboratory (INL)
- June 29, 2015: SC&A releases it's review and evaluation of the CPP SEC class definition
- July 21, 2015: NIOSH releases PER for SEC-00219 Rev. 01, INL
- August 21, 2015: NIOSH provides an update with supporting information for SEC-00219 Rev. 01 per Advisory Board Instruction
- September 28, 2015: SC&A releases it's revised review of the CPP SEC class definition

Timeline of SEC Class Definition Discussions

- INL Work Group Discussions
 - April 22, 2015 – Clarification and Technical Teleconference between the Work Group, NIOSH and SC&A (not open to the public)
 - July 8, 2015 – Work Group Teleconference
 - November 10, 2015 – Work Group Meeting
- Advisory Board Discussions
 - March 26, 2015 – ABRWH Meeting 104 in Richland, WA
 - July 23, 2015 – ABRWH Meeting 105 in Idaho Falls, ID

Currently Proposed 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 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 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.”

Rationale for Original SEC Class




- Contamination control program was deemed ineffective
- Bioassay program was incident-based
- In-vivo program deemed inadequate to detect chronic low-level alpha/beta exposures
- Insufficient available air monitoring data
- *“The potential for exposures to transuranics that had been separated from the mixed fission products makes it unlikely that exposures to alpha-emitters can be reconstructed from January 1963 through December 1974.” (SEC ER, pg. 188)*

Rationale for Revision 01 of Class Definition

- Revision 00 of the SEC Class definition assumed a “one badge, one area” dosimetry program at INL
 - When a worker leaves one INL area to go to a second area, the badge was left in the original area and a new badge was issued for the new area
 - Any entrance to CPP would have a CPP-specific badge
- Additional documentation indicates a shift to a “one badge, multiple area” dosimetry program at INL
 - Workers only issued one badge for entire site
 - Entrance to CPP possible without CPP-specific badge

Rationale for Revision 01 (cont.)

- Shift to “one badge, multiple areas” appears to have occurred on March 1, 1970
- Shift back to “one badge, one area” in December 1974

	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.

SC&A Revision 01 Evaluation Approach

Purpose/Goal: Evaluate if the revised SEC Class definition may unintentionally exclude workers from the SEC Class due to current dosimetry requirements.

1. Review all currently available claimants with at least 250 Days of covered employment
 - Split original SEC period into two components based on dosimetry requirements
 - Identify claimants that did not meet dosimetry requirements in one or both SEC periods for further investigation
2. Investigate claimants who did not meet SEC dosimetry requirements to determine the potential for internal exposure to alpha-emitting contaminants at CPP

Overview of Claimant Population (both periods)

- At the time of its review, SC&A identified 898 total claimants with covered employment who worked in one or both portions of the SEC period.
 - 107 claims did not meet the 250-day criteria in either the SEC period or the two periods combined (note: SC&A still evaluated 61 of these claims).
 - 19 claims appear to only have worked at ANL-W and/or NRF (i.e. – no evidence of work at INL). 5 of these claims also did not have 250 days of employment.
 - 2 claims did not have DOE monitoring records, because the claims were filed too recently
 - 1 claim had been withdrawn prior to receiving DOE monitoring records.

Breakdown by SEC Period: Later Period (3/1/1970 – 12/31/1974)

Category	Number of Claims	Percent of Total
Total Claims Evaluated	710	–
Number of Claims Monitored	601	84.6%
Number of Claims Not Monitored	109	15.4%
Number with 250 Days or More	616	86.8%
Number with Less than 250 Days	94	13.2%
Number Meeting SEC Requirements	548	77.2%

Later Period (continued) (3/1/1970 – 12/31/1974)

SC&A had three observations based on its review of claimants in the latter portion of the SEC period:

- Observation 1: While the class definition provides the example of “at least one film badge or TLD dosimeter,” SC&A has assumed that any evidence of monitoring during the latter SEC period (3/1/1970–12/31/1974) will satisfy the intended criteria.

Later Period (continued)

(3/1/1970 – 12/31/1974)

SCHED INF5553-A

M A S T E R D U M P

50/30/58

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BADGE BIRTH DATE			NAME		CONT	CFT	SECT	COST	PAYROL	SOC.	SEC.	ST BK	ISSUE	TERM	ID-NUM	BPTH	S/
N-PENT	PENT	NEUT	YEAR	UPDT	N-PEN	PENET	NEUTRON	OFFSITE	WBC	SWBC	UR	SUA	TC	STC			
(MANUAL CHAPTER 0525)						AREA	PULL	START	STOP	SEQ							
						CONT	START	STOP	SEQ								
			1969	4	1760	1720		0	0								
			1970	4	3680	1990		0	0								
			1971	6	1975	2140		0	0								
			1972	7	5460	3200		0	0								
			1973	5	2205	3370		0	0								
			1974	5	5115	3087		0	0								
			1975	7	2770	1750		0	0								
			1976	8	2560	2425		0	0								
			1977	6	2546	2978		0	0								
			1978	5	2452	3383		0	0								
			1979	8	2134	2085		0	0								
			1980	8	1029	1579		0	0								
			1981	0	384	1045		0	0								
			1982	8	555	952		0	0								
			1983	4	806	418		0	0								
			1984	4	882	719		0	0								
			1985	4	874	896		0	0								
			TOTAL		37632	41992		62									

Later Period (continued) (3/1/1970 – 12/31/1974)

Bechtel BWXT Idaho, LLC provides dosimetry services and maintains occupational radiation records for U. S. Department of Energy and contractor personnel at the INEEL; Grand Junction, Colorado Project Office (GJPO); and West Valley, New York Project (WV).

External Dose Equivalent (mrem)

(INEEL, GJPO, WV)

<u>Period of Time</u>	<i>Whole Body/Effective</i>		
	<u>Deep</u>	<u>Shallow</u>	<u>Extremity</u>
10/1969 Thru 1975	0	0	---
	See Dosimetry summary.		
1982 - 1983 Yearly Freq.	See attached for detail summary.		
1984 Yearly Freq.	0	0	---
<u>Current year</u>	<u>None Recorded</u>		
<u>Internal Dose</u>	<u>None Recorded</u>		

Later Period (continued) (3/1/1970 – 12/31/1974)

- Observation 2: SC&A identified a single claim that contained in-vivo dosimetry related to CPP, but did not have related external dosimetry. It is recommended that this claim be included with the claims requiring additional data capture at INL.
- Observation 3: Clarification is warranted to establish how “temporary” and/or “visitor badges” are utilized in the implementation of the class definition during the later SEC period (3/1/1970–12/31/1974).

Breakdown by SEC Period: Earlier Period (1/1/1963 – 2/28/1970)

Category	Number of Claims	Percent of Total
Total Claims Evaluated	219	—
Claims Meeting the SEC Requirements (Monitored at CPP)	67	30.6%
Claims Monitored but Did Not Meet SEC Criteria (No Evidence of CPP Exposure)	102	46.6%
Not Monitored	26	11.8%
Other	24	11.0%

Earlier Period (continued) (1/1/1963 – 2/28/1970)

SC&A had one additional observation related to the earlier SEC period:

- Observation 4: Absent additional information to the contrary, dosimetry associated with “CADRE” should be considered CPP for the purposes of determining SEC eligibility. Similar to the CPP dosimetry records, it is important to establish that “CADRE” badging records have all been captured from INL.

Earlier Period (continued)

(1/1/1963 – 2/28/1970)

Area Code	Area Description	Comments
30	ANP – Aircraft Nuclear Program	Located at TAN
31	STPF	
32	NRF	Per George Rammell (Marie E.)
33	CFA Laundry Monthly	
34	CFA Monthly	
35	CFA Quarterly	
42	TRA Monthly	
45	TRA Quarterly	
53	CPP Monthly	
55	CPP Quarterly	
61	Unknown to Paul and Marie	
63	S1W	Located at NRF
64	AIW	Located at NRF
65	ECF – Expended Core Facility	Located at NRF
66	Non-Security	
67	Division of Compliance	
68	STEP	TAN
69	SPFT	GE
70	LPTF	Phillips/AEC
71	CADRE	Believed to be located at CPP
72	EBOR	Located at TAN
73	EBOR	Located at TAN



NIOSH Cases Identified for Further Evaluation with DOE/INL

- NIOSH's August 21, 2015 Work Group update identified 10 claims that required follow-up inquiries with INL
- SC&A observed the following rationale for selection of these 10 claims (Observation 5):
 - Direct evidence of assignment to CPP, such as an entry in the Energy Employee's Location File Card indicating assignment to that area
 - Anecdotal evidence, such as Computer-Assisted Telephone Interview (CATI) statements or information contained in the initial DOL application/case file

Example NIOSH Cases Identified for Further Evaluation

- Trades Worker
 - External monitoring ends in 1962
 - CATI lists CPP as one of five work locations at INL
 - Describes incident at CPP in “1963–1966” timeframe
- Radioecologist
 - Only career doses available
 - Location File Card lists CPP in later SEC period
 - CATI with survivor notes “worked all over site”
- Engineer
 - Location File Card does not indicate CPP
 - Internal and external monitoring at other INL locations
 - DOL Initial Case lists ICPP as a work area

SC&A Cases Recommended for Further Evaluation with DOE/INL

- Based on its independent review of the claimant population, SC&A identified 23 additional cases requiring follow-up
 - 2 of 23 were also identified by NIOSH
 - 10 of 23 were located in the CPP hardcopy records (Routine, Temporary, and Construction Badges)
 - Remaining 11 of 23 recommended for follow-up with DOE/INL (Observation 6)

Example SC&A Cases Recommended for Further Evaluation

- Trades Worker
 - No external monitoring available until 1975
 - EE states that badging was intermittent
 - CATI describes incident at CPP in “early 1970’s”
- Driver
 - Location File Card and external monitoring for locations other than CPP
 - In Vivo questionnaire from 1967 indicates previous work area as “CPP for 18 months”
- Trades Worker
 - In Vivo result for CPP in later SEC period
 - External dosimetry ends in 1960
 - Energy Employee does NOT have 250 days in the later SEC period

Summary

- Several Observations related to clarification of the SEC class definition:
 - Use of annual/career records as well as other records, such as in-vivo results in place of individual dosimeters (later SEC period)
 - Use of temporary and/or visitor badges
- A combined 21 claims were identified by NIOSH and SC&A for further investigation to validate the class definition

Comments and Questions?