
Draft

**ADVISORY BOARD ON
RADIATION AND WORKER HEALTH**

National Institute for Occupational Safety and Health

**VERIFICATION AND VALIDATION OF TEMPORARY
BADGES AT THE CHEMICAL PROCESSING PLANT
(1963–1970)**

**Contract No. 211-2014-58081
SCA-TR-2019-SEC001, Revision 0**

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SC&A, INC.:

Technical Support for the Advisory Board on Radiation and Worker Health Review of NIOSH Dose Reconstruction Program

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ABBREVIATIONS AND ACRONYMS

ABRWH, Board	Advisory Board on Radiation and Worker Health
CATI	computer-aided telephone interview
CFA	Central Facilities Area
CPP	Chemical Processing Plant
DOE	U.S. Department of Energy
DOL	U.S. Department of Labor
EBR-II	Experimental Breeder Reactor II
EE	Energy Employee
INL	Idaho National Laboratory
LFC	location file card
MST&T	Mountain States Telephone and Telegraph
MTR	Material Test Reactor
NIOSH	National Institute for Occupational Safety and Health
NOCTS	NIOSH/OCAS Claims Tracking System
OCAS	Office of Compensation Analysis and Support
ORAU	Oak Ridge Associated Universities
SEC	Special Exposure Cohort
SPERT	Special Power Excursion Reactor Test
TAN	Test Area North
TRA	Test Reactor Area
V&V	verification and validation

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1 INTRODUCTION AND BACKGROUND

As part of its evaluation of Special Exposure Cohort (SEC) Petition 00219, the Idaho National Laboratory (INL)/Argonne National Laboratory-West Work Group requested that SC&A investigate methods to verify and validate the proposed class definition for the Idaho Chemical Processing Plant (CPP) during the period from January 1, 1963, to February 28, 1970. The SEC-00219 evaluation report proposes the class definition as follows for this period:

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...
[NIOSH 2017, p. 1]

Specifically, SC&A was tasked with evaluating the portion of the class definition that required CPP-specific external dosimetry. Preliminary investigations by the National Institute for Occupational Safety and Health (NIOSH) and SC&A discovered that nonroutine external badging (referred to as “temporary badges” in this report) was not always entered into the INL dosimetry system, and thus these dosimetry records were not being appropriately assigned to potential members of the SEC class. In response to this issue, the U.S. Department of Energy (DOE) began an extensive coding effort in 2016 to index the temporary badges so that they are appropriately assigned to the correct energy employee (EE). Once those badges had been correctly indexed, all appropriate external dosimetry should be available for individual SEC adjudication under the requirements of the proposed definition (shown above).

As the necessary DOE coding effort began in 2016, the Work Group expressed concern that inherent difficulties in the coding effort, such as incorrect transcription, variation in the legibility and quality of handwritten records, and other human error, may inadvertently result in the exclusion of a qualified claimant from the proposed SEC class. The decision about the acceptable level of effectiveness and completeness of the dosimetry index is of singular importance to the Work Group and Advisory Board on Radiation and Worker Health’s (Board’s) ultimate recommendation on the SEC class. To evaluate these concerns, SC&A proposed a method in which the dosimetry files for a set of claims with known temporary badges at CPP would be requested from DOE after the coding had been completed. The verification and validation (V&V) methodology proposal is documented in SC&A memoranda of September 29, 2016 (SC&A 2016a), and August 3, 2017 (SC&A 2017), and was discussed during the May and August 2017 Work Group meetings (ABRWH 2017a, 2017b). At the August 2017 meeting, the Work Group determined that the proposed V&V method should proceed in stages, with the first group of 30 claimant dosimetry file requests to be completed prior to a second group of 30 claimant dosimetry requests. This would allow for more efficient analysis of the claim files as DOE completed the records requests.

After the August 2017 Work Group meeting, NIOSH began submitting requests to INL/DOE for these V&V claims with cover letters that stated the following:

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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.*

However, it was clear that early dosimetry records received from INL/DOE did not contain the identified temporary badges, and so records were requested from INL/DOE a second time in the spring 2018. SC&A provided a status memo on the first 18 of 30 claimant files received in July 2018 (SC&A 2018a) and presented the results to the Work Group and Advisory Board in August 2018 (SC&A 2018b). Based on the SC&A 2018a analysis, NIOSH determined the INL/DOE records identification process was still not functioning properly for at least 2 of the 18 claims analyzed in SC&A's interim status memorandum. A third request was made to INL/DOE for these two cases (see Section 4.0) in addition to requests for the remaining 12 of 30 claims. Updated dosimetry files were received from INL/DOE for all 30 claims by mid-October 2018.

2 CHARACTERIZATION OF TEMPORARY BADGES

During the SEC period under evaluation (1963–1970), individual INL facilities issued routine location-specific dosimetry badges to correctly track and attribute accrued doses for the facility and associated operating contractor. Temporary badges were used for workers who were not on a routine dosimetry monitoring schedule specific to a given facility but who were required to enter the facility for unique job assignments. For example, a worker might have a routine monthly dosimetry badge for the Central Facilities Area (CFA) but be required to travel to the CPP for another work assignment. Upon arriving at the guarded entrance to CPP, the worker would be assigned a temporary badge to use while working in the facility.

The temporary badge records reviewed for this SEC evaluation are in two general formats:

1. Temporary Badge Reports: a single page listing of between 1 and 27 EEs, often from multiple employers, which correlates to the date the temporary badges were read and reported (see Figure 1).
2. Visitor Badge Cards: a unique card for an EE that lists the issue date and expiration date and generally has a read date handwritten on the back of the card. In addition, the EE's name, employer, INL security number, and the supervisor authorizing the card issuance are provided (see Figure 2).

In general, such temporary badges were assigned for a period of a few days; however, they could also be assigned for periods of a month or more. Table 1 provides examples of temporary badges that exceeded 1 month in each year under evaluation.

Figure 1. Example of a Temporary Badge Report from 1963

10-100
(11-60)

OFFICIAL USE ONLY

TEMPORARY BADGE REPORT

Area GPP Report Date 6-12-63

BADGE No.	NAME	Employer (Spell Out)	Dates Used	EXPOSURE		
				BETA	GAMMA	TOTAL
206861	Phillips, S. E.	Wasatch	6-8-63	0	0	
206862	Phillips, S. E.	Phillips	6-10-63	0	0	
206863	Phillips, S. E.	H. K. Ferguson	6-10-63	0	0	
206864	Phillips, S. E.	Phillips	6-9-63	0	0	
206865	Phillips, S. E.	Marchant Calculators	6-10-63	0	0	
206866	Phillips, S. E.	Phillips	6-9-63	0	0	
206867	Phillips, S. E.	General Electric-Hanford	6-10-63	0	0	
206868	Phillips, S. E.	Idaho Nuclear power Field Office	6-11-63	0	0	
206869	Phillips, S. E.	Wasatch	6-8-63	0	0	
206870	Phillips, S. E.	Phillips	6-10-14-63	0	0	
206871	Phillips, S. E.	H. K. Ferguson	6-10-63-6-11-63	0	0	
206872	Phillips, S. E.	Phillips	5-1-6-10-63	0	0	

Figure 2. Example of the Front and Back of a Visitor Badging Card from 1968–1969

VISITOR EXCHANGE	
GPP AREA	
No AC 20036	
[REDACTED]	
[REDACTED]	
[REDACTED]	
REPRESENTING	
10-30-68 1-3-69	
ISSUED	EXPIRES
[REDACTED]	[REDACTED]
AUTHORIZED BY	
[REDACTED]	[REDACTED]
SIGNATURE	

✓
1-10-69
2-8-5

Table 1. Examples of Temporary Badges Exceeding 30 Days of Exposure

Year	Issue Date	Expiration Date	Report Date	Days Covered by Badge	SRDB Ref. ID (PDF page #)
1963	5/1/1963	6/10/1963	6/12/1963	41	151623 (p. 205)
1964	4/1/1964	5/7/1964	5/7/1964	37	143043 (p. 154)
1965	6/7/1965	7/12/1965	7/14/1965	36	143042 (p. 47)
1966	7/28/1966	8/31/1966	8/31/1966	35	143041 (p. 76)
1967	7/12/1967	12/7/1967	12/8/1967	149	143039 (p. 62)
1968	10/30/1968	1/3/1969	1/10/1969	66	151596 (pp. 34–35)
1969	12/4/1969	1/4/1970	Not Provided	32	143032 (p. 142)
1970	2/16/1970	3/17/1970	3/20/1970	30	143032 (p. 36)

3 EVALUATION OF 30 UPDATED CLAIMANT DOSIMETRY FILES RECEIVED FROM INL/DOE

Table 2 compares the temporary badges identified by SC&A and the updated dosimetry files recently transmitted to NIOSH from INL/DOE. It is important to note that the majority of temporary badge reports do not contain other identifying information besides last name, first and middle initials, and the employer at the time of the badging.¹ Therefore, the only temporary badges considered in columns 2 and 3 of Table 2 had to have exact matches for these four identifiers (alternately, three identifiers if the middle initial was not provided). In addition, an exception was made for Case L,² in which the exclusion of “█” was evaluated for the reasons stated in association with that case in Table 2.

SC&A identified 671 temporary badges for evaluation among the 30 claims included in the study. Of those 671 temporary badges, 634 (94.5%) were successfully identified and included in the updated monitoring records provided by INL/DOE. Among the 30 cases evaluated in this study, exactly half of them contained all of the temporary badges identified by SC&A in the updated dosimetry record (i.e., 15 of 30 cases had 100% coverage).

¹ An INL security number (referred to by INL as the “S#”) was usually included only in cases where a positive dose was accrued during the temporary badging period.

² Formerly Case F in SC&A 2018a.

Table 2. Overview of V&V Evaluation for 30 Claimants

Case ID*	Total # of Temporary Badges Checked from SC&A List	Total # of SC&A Badges Found in Updated DOE Response (% of Total)	Case Notes and Comments
A	2	1 (50%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Idaho Nuclear. Job Title: [REDACTED]. Location file card (LFC) indicates assignment to Test Area North (TAN), CFA, Test Reactor Area (TRA), and CPP during period of interest. During the time frame of the missing temporary badge, the EE also had temporary badges at the Material Test Reactor (MTR) and was routinely badged at TAN. Computer-aided telephone interview (CATI) report with the EE indicated that gloveboxes and fume hoods were sometimes used at CPP. Both the SC&A review of temporary badges and the updated DOE response file contained the following name variation: [REDACTED].
B	41	32 (78.0%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. LFC does not cover the period of interest. Both "[REDACTED]" and "[REDACTED]" appear in the dosimetry file and temporary badges (there was no connection between the missing temporary badges and the exclusion of the middle initial). Potential name variations identified in SC&A-reviewed temporary badges: [REDACTED], [REDACTED], and [REDACTED]. None of the temporary badges associated with these name variations were included in the updated DOE file. Updated DOE response does contain the following variations in other records: [REDACTED].
C	5	4 (80.0%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: H.S. Wright. Job Title: [REDACTED]. LFC indicates assignment to the Naval Reactor Facility, MTR, and CPP during the period of interest. The EE does not appear to be badged in another area during the missing temporary badge period; however, the LFC indicates assignment to MTR. CATI with EE does not mention CPP. No name variations were observed in either the SC&A analysis or the updated DOE response file.

Case ID*	Total # of Temporary Badges Checked from SC&A List	Total # of SC&A Badges Found in Updated DOE Response (% of Total)	Case Notes and Comments
D	5	4 (80.0%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. LFC does not cover the period of interest. Missing temporary badge simply lists the last name "[REDACTED]" with the employer given as "[REDACTED]." U.S. Department of Labor (DOL) initial case file indicates the employer was Phillips Petroleum during the missing temporary badge period. The EE does not appear to be badged in another area during the missing temporary badge period. CATI with EE notes that booties were worn once while in CPP. No name variations were identified in the set of temporary badges identified by SC&A. Updated DOE response includes the additional name variations: [REDACTED].
E	121	110 (90.9%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. LFC indicates assignment to TAN and CFA during period of interest. Missing temporary badges occurred from [REDACTED], during which the EE was badged both routinely and temporarily in many INL locations. Over 500 temporary badges were observed in the updated DOE response file during the period of interest. SC&A identified two name variations: [REDACTED], both of which were included in the updated DOE response file. In addition, updated DOE response includes the following name variations: [REDACTED]
F	25	23 (92.0%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. LFC indicates various temporary/visitor badging periods at CFA, MTR, CPP, and TAN during the SEC period of interest. Potential name variations identified in SC&A-reviewed temporary badges: [REDACTED]. Only the last variation (" [REDACTED] ") was included in the updated DOE response; however, it was also a positive result, so the S# was included on the temporary badge report. Updated DOE response does contain the following variations in other records: [REDACTED]

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Case ID*	Total # of Temporary Badges Checked from SC&A List	Total # of SC&A Badges Found in Updated DOE Response (% of Total)	Case Notes and Comments
G	13	12 (92.3%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum. Job Title: [REDACTED]. LFC indicates assignment to Power Burst Facility and TRA during the period of interest. CATI with the EE notes that they had occasion to visit every area of INL, including CPP. EE was routinely badged at the Special Power Excursion Reactor Test (SPERT) during the missing temporary badge period. One potential name variation was identified in SC&A-reviewed temporary badges: [REDACTED]. One of the two badges identified by SC&A with this name was included in the updated DOE response. However, the DOE response contains many more examples of the name [REDACTED] in other dosimetry records. The updated DOE response contained the following additional name variations: [REDACTED].
H	17	16 (94.1%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Ormond Construction. Job Title: [REDACTED]. LFC indicates that CPP was the primary work location. Missing temporary badge lists Ormond Construction as the employer, which is verified in the DOL initial case file as the EE's employer during the period when the badge was issued. Potential name variation identified in SC&A-reviewed temporary badges: [REDACTED]. This record was not included in the updated DOE response file. Updated DOE response does contain the following variations in other records: [REDACTED].
I	35	33 (94.3%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. LFC only lists CPP as a work area but only provides the "withdrawal date" of [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A. Updated DOE response contains the following name variation: [REDACTED].

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Case ID*	Total # of Temporary Badges Checked from SC&A List	Total # of SC&A Badges Found in Updated DOE Response (% of Total)	Case Notes and Comments
J	19	18 (94.7%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. LFC indicates assignment to CPP and TAN during the period of interest. EE was temporarily badged at MTR during the missed temporary badge period of interest. CATI with EE indicates decontamination activities in hot cells while working as a [REDACTED]. Name variation identified by SC&A: [REDACTED]. One of the two badges identified by SC&A with this name variation was included in the updated DOE response file. Updated DOE response contains the following additional name variations: [REDACTED].
K	20	19 (95.0%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. LFC indicates assignment to TAN, MTR, CPP, and the Experimental Breeder Reactor-II (EBR-II) during the period of interest. EE was routinely badged at MTR during the missing temporary badge period. CATI with the EE does not mention CPP. One name variation was identified by the SC&A analysis ([REDACTED]), which was also identified in the updated DOE response. In addition, the updated DOE response includes the name variations: [REDACTED].

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Case ID*	Total # of Temporary Badges Checked from SC&A List	Total # of SC&A Badges Found in Updated DOE Response (% of Total)	Case Notes and Comments
L	49	47 (95.9%)	<ul style="list-style-type: none"> Name: [REDACTED] (however, "[REDACTED]" appears with the same security number interchangeably in the claimant's regular dosimetry records). Employer: Phillips Petroleum. Job Title: [REDACTED]. This case was part of the July 2018 V&V interim analysis (SC&A 2018a), and the records were requested a third time in August 2018 after it was discovered only 12.5% of the identified temporary badges were included in the updated DOE response file. The older submission by DOE had only included records containing the name [REDACTED] and excluded entries with "[REDACTED]" in the name. LFC only lists CPP as a work location. Potential name variations identified in the SC&A-reviewed temporary badges: [REDACTED] (however, [REDACTED] and [REDACTED] appear to be written over top of one another) and [REDACTED]. The temporary badge for [REDACTED] was included in the updated DOE response. Updated DOE response also contains the following variations in other records: [REDACTED] [REDACTED] (note: neither the name "[REDACTED]" nor a middle initial of any kind appears in the DOL case files or CATI interview with the survivor).
M	31	30 (96.8%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum. Job Title: [REDACTED]. This case was part of the July 2018 V&V interim analysis (SC&A 2018a), and the records were requested a third time in August 2018 after it was discovered none of the identified temporary badges were included in the updated DOE response file. LFC and extensive regular dosimetry indicates work at the MTR and TRA. CATI with the EE does not mention CPP but does mention the EE was part of the "[REDACTED]" for the first [REDACTED] years of employment (EE's covered employment starts on [REDACTED]). No name variations were identified in the set of temporary badges reviewed by SC&A. Updated DOE response contains the following name variation: [REDACTED].

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Case ID*	Total # of Temporary Badges Checked from SC&A List	Total # of SC&A Badges Found in Updated DOE Response (% of Total)	Case Notes and Comments
N	68	66 (97.1%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: F.C. Torkelson/Idaho Nuclear. Job Title: [REDACTED]. LFC indicates assignment to CFA, TAN, MTR, and "Nx" (assumed by SC&A to represent new construction) during the period of interest. Potential name variations identified in SC&A-reviewed temporary badges: [REDACTED] (both variations associated with F.C. Torkelson), and [REDACTED] (associated with Idaho Nuclear Corporation). None of the identified temporary badges associated with these name variations were included in the updated DOE response. No additional name variations were identified in the updated DOE response.
O	41	40 (97.6%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. LFC indicates assignment to the Area Hot Cell, TAN, CFA, MTR, CPP, and EBR-II during the period of interest. The EE was also temporarily badged at MTR during the missing temporary badge period for CPP. Name variations identified by SC&A: [REDACTED]. The updated DOE response contained five of the eight identified badges with these name variations. The updated DOE response contained the following additional name variation: [REDACTED].
P	4	4 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A nor identified in the updated DOE response.
Q	4	4 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A nor identified in the updated DOE response.
R	30	30 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A nor identified in the updated DOE response.
S	25	25 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job title: [REDACTED]. Potential name variation identified in SC&A-reviewed temporary badges: [REDACTED]. This record was not included in the updated DOE response file. Updated DOE response does contain the following variations in other records: [REDACTED].

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Case ID*	Total # of Temporary Badges Checked from SC&A List	Total # of SC&A Badges Found in Updated DOE Response (% of Total)	Case Notes and Comments
T	7	7 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: H.S. Wright, H.K. Ferguson, Fluor. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A nor identified in the updated DOE response.
U	1	1 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A nor identified in the updated DOE response. Interestingly, this claim was part of earlier evaluations by SC&A and NIOSH in which no previous external dosimetry could be found but the claim record at the time contained an in vivo record labelled CPP (refer to NIOSH 2016, SC&A 2016b, and ABRWH 2016, pp. 46–52).
V	32	32 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: MST&T (Mountain States Telephone and Telegraph). Job Title: [REDACTED]. Potential name variations identified in SC&A-reviewed temporary badges: [REDACTED]. All four name variations are associated with MST&T; only the last variation (“[REDACTED]”) was included in the updated DOE response. Updated DOE response does contain the following additional name variations: [REDACTED].
W	7	7 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum. Job Title: [REDACTED]. One of the temporary badge records identified by SC&A contained an INL security badge number that had numbers transposed (“[REDACTED]” instead of the correct security badge number of “[REDACTED]”); however, the record was still included with the updated DOE response. No name variations were identified in the set of temporary badges reviewed by SC&A nor identified in the updated DOE response.
X	20	20 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. Potential name variations identified in SC&A-reviewed temporary badges: [REDACTED]. The temporary badges identified with these name variations were not included in the DOE response; however, an additional CPP temporary for “[REDACTED]” did appear in the records. Updated DOE response does contain the following name variation: [REDACTED].

Case ID*	Total # of Temporary Badges Checked from SC&A List	Total # of SC&A Badges Found in Updated DOE Response (% of Total)	Case Notes and Comments
Y	25	25 (100%)	<ul style="list-style-type: none"> Name: [REDACTED] ([REDACTED] also appears in DOE-supplied monitoring records). Employer: Phillips Petroleum. Job Title: [REDACTED]. Potential name variations identified in SC&A-reviewed temporary badges: [REDACTED]. Only the temporary badge with the last name variation (" [REDACTED] ") appeared in the updated DOE response. Updated DOE response does contain the following variations in other records: [REDACTED].
Z	1	1 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Idaho Nuclear. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A. Updated DOE response contains the following name variations: [REDACTED].
AA	7	7 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Phillips Petroleum/Idaho Nuclear. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A. Updated DOE response contains the following name variations: [REDACTED].
AB	4	4 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: H.S. Wright. Job Title: [REDACTED]. SC&A identified the following name variations: [REDACTED]. Only the latter name variation appeared in the updated DOE response. Updated DOE response contained the additional name variation: [REDACTED].
AC	4	4 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: Atomic Energy Commission. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A. Updated DOE response contained the additional name variation: [REDACTED].
AD	8	8 (100%)	<ul style="list-style-type: none"> Name: [REDACTED]. Employer: U.S. Weather Bureau. Job Title: [REDACTED]. No name variations were identified in the set of temporary badges reviewed by SC&A. Updated DOE response contained the additional name variations: [REDACTED].

*Case ID is an arbitrary designation that does not have any direct connection to the claimant. Attachment A provides the actual NIOSH/OCAS Claims Tracking System (NOCTS) claim numbers associated with each case ID designation for reference.

**It is unclear why a record associated with this name was included in Case AD's dosimetry response file.

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4 DISCUSSION OF TWO CASES IDENTIFIED IN AUGUST 2018 AS REQUIRING FURTHER RESEARCH

As noted in Section 1, two of the cases evaluated as part of SC&A’s 2018 interim analysis showed significant issues with the identification of temporary badges. These are shown in Table 2 as Cases L and M.³ For Case L, the 2018 analysis found that only 6 of 49 (~12.2%) of the identified temporary badges had been included in the updated DOE monitoring records. For Case M, none of the 31 identified temporary badges had been included in the updated records.

In response to this, NIOSH resubmitted records requests a third time in August 2018 for these two individuals with modified cover letters that noted:

NIOSH and the ORAU Team have discussed this case with [name redacted], who has agreed that additional temporary dosimetry badges exist and has committed to providing the additional information.

Based on the DOE response file received subsequent to this request, the percentage of identified temporary badges included in the claim file increased to 95.9% (47 of 49) and 96.8% (30 of 31) for Cases L and M, respectively.

5 EVALUATION OF NAME VARIATIONS AMONG TEMPORARY/VISITOR BADGES

During the course of its original review of temporary badges, SC&A identified many examples where it appeared slight variations or misspellings of the EE’s name were observed. While these variations were not included in the totals evaluated in Section 3, they are discussed as appropriate in the “Case Notes and Comments” column of Table 2. SC&A observed a total of 51 temporary badges with potential variations of the claimant’s name, 15 of which (29.4%) were included in the corresponding updated DOE response file. Table 3 summarizes the observed name variations.

Table 3. [This table contains Privacy Act information and was fully redacted. The table spans from the lower half of page 17 to the lower half of page 18]

³ In the SC&A 2018a analysis, Cases L and M were denoted as Cases F and K, respectively.

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In addition, SC&A evaluated the updated dosimetry files provided by DOE/INL for additional name variations that were not identified in SC&A's review of temporary badges but had been included in the updated dosimetry file. These additional name variations are described for each applicable case in Table 2. A total of 66 additional name variations among 21 of the reviewed claims were identified in the updated dosimetry files provided by INL/DOE.

6 SUMMARY CONCLUSIONS

SC&A's verification and validation review of 30 claims covering 671 temporary badges resulting in the following conclusions:

- Overall, 94.5% of all identified badges (634/671) had been correctly attributed to the EE and included in their individual dosimetry file.
- On average among the 30 reviewed claims, 94.3% of identified badges per claim were correctly included in the EE's individual dosimetry file.
- 15 of the 30 reviewed claims contained 100% of the temporary badges identified by SC&A.

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- The two cases with significant issues identified during SC&A’s 2018 interim status review showed marked improvement, based on the resubmission of dosimetry records from INL/DOE that occurred during fall 2018. The percentage of temporary badges identified by SC&A improved from 12.2% to 95.9% in one of the cases and 0% to 96.8% in the other case.
- Only 15 of 51 (29.4%) of the temporary badges with name variations identified by SC&A were included in the updated dosimetry files provided by INL/DOE.
- SC&A observed an additional 66 name variations (covering 21 of the 30 reviewed claims) in the temporary badge files included with the updated dosimetry files provided by INL/DOE.
- All 30 cases had at least one CPP badge in evidence in the updated dosimetry record.

7 REFERENCES

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SC&A 2018b. *Presentation: Idaho National Laboratory SEC Petition-00219 Update*, SC&A, Inc., Arlington, VA. August 23, 2018.

ATTACHMENT A: NOCTS CLAIM NUMBERS ASSOCIATED WITH EACH CASE ID DESIGNATION

Case ID	NOCTS Claim #
A	[redacted]
B	[redacted]
C	[redacted]
D	[redacted]
E	[redacted]
F	[redacted]
G	[redacted]
H	[redacted]
I	[redacted]
J	[redacted]
K	[redacted]
L	[redacted]
M	[redacted]
N	[redacted]
O	[redacted]
P	[redacted]
Q	[redacted]
R	[redacted]
S	[redacted]
T	[redacted]
U	[redacted]
V	[redacted]
W	[redacted]
X	[redacted]
Y	[redacted]
Z	[redacted]
AA	[redacted]
AB	[redacted]
AC	[redacted]
AD	[redacted]