
DRAFT

**REPORT TO THE ADVISORY BOARD
ON RADIATION AND WORKER HEALTH**

National Institute for Occupational Safety and Health

**BLIND DOSE RECONSTRUCTION OF CASE # [REDACTED]
FROM THE Y-12 NATIONAL SECURITY COMPLEX AND
THE X-10 OAK RIDGE NATIONAL LABORATORY**

**Contract No. 200-2009-28555
SCA-TR-BDR2014-CN [REDACTED]**

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S. Cohen & Associates: <i>Technical Support for the Advisory Board on Radiation & Worker Health Review of NIOSH Dose Reconstruction Program</i>	Document No. SCA-TR-BDR2014-CN[REDACTED]
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BLIND DOSE RECONSTRUCTION OF CASE # [REDACTED] FROM THE Y-12 NATIONAL SECURITY COMPLEX AND THE X-10 OAK RIDGE NATIONAL LABORATORY	Page 2 of 122
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EXECUTIVE SUMMARY

Under Contract No. 200-2009-28555, SC&A has been tasked by the Advisory Board on Radiation and Worker Health (Advisory Board) to perform eight blind dose reconstructions (DRs). This report presents the methodologies and results of our DR concerning one case selected by the Advisory Board, which represents a worker employed at the Y-12 Plant and Oak Ridge National Laboratory (ORNL), referred to as the X-10 facility.

To perform this blind DR, SC&A was provided with all of the Department of Energy (DOE) dosimetry records; the Department of Labor (DOL) correspondence, forms, and medical records; and the Computer-Assisted Telephone Interview (CATI) Report that were made available to NIOSH for constructing doses in behalf of this case. SC&A used two independent approaches to reconstruct occupational external and internal doses in behalf of this case. Both approaches used the available dosimetry records and current guidance from the National Institute for Occupational Safety and Health (NIOSH) and its contractor, Oak Ridge Associated Universities Team (ORAUT). The first approach, which is referred to as DR–Method A, used the spreadsheets and other tools developed by NIOSH to calculate the doses, whereas, the second approach, referred to as DR–Method B, manually calculated the doses.

This Executive Summary provides an overview of the case and a comparison of the results of the two independent DR methods. Section I of this report provides a detailed discussion of the approach used to reconstruct external/internal occupational radiation doses using DR–Method A, and Section II describes the reconstruction of doses using DR–Method B.

RELEVANT BACKGROUND INFORMATION

According to the DOL records, this case represents an energy employee (EE) who worked at the Y-12 Plant from [REDACTED], through [REDACTED], and at the X-10 Plant from [REDACTED], through [REDACTED]. The EE was diagnosed with **eight skin cancers** between [REDACTED] and [REDACTED], as shown in Table ES-1.

Table ES-1. Cancers and Diagnosis Date

#	Description	Diagnosis Date	ICD-9 Code
1	SCC [REDACTED]	[REDACTED]	[REDACTED]
2	SCC [REDACTED]	[REDACTED]	[REDACTED]
3	BCC [REDACTED]	[REDACTED]	[REDACTED]
4	BCC [REDACTED]	[REDACTED]	[REDACTED]
5	BCC [REDACTED]	[REDACTED]	[REDACTED]
6	BCC [REDACTED]	[REDACTED]	[REDACTED]
7	SCC [REDACTED]	[REDACTED]	[REDACTED]
8	SCC [REDACTED]	[REDACTED]	[REDACTED]

According to the CATI, DOL records, and DOE records, the EE was employed as a [REDACTED] at Y-12 and worked predominantly in the [REDACTED] Lab in Building [REDACTED]. During employment at the X-10 facility, the EE was employed as a [REDACTED] and worked primarily in Building [REDACTED] ([REDACTED] Division). DOE records show that the EE was monitored on a quarterly basis for external exposure to gamma, beta, and neutron radiation. The EE was

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monitored for internal exposure to uranium by means of urinalysis bioassays, and for U-235 and thorium by means of lung counts.

PRESENTATION OF RESULTS

The results of both independent DR methods are shown in Table ES-2. DR–Method A derived total skin doses to the various cancer sites ranging from **4.258 rem** to **6.782 rem**, resulting in a probability of causation (POC) of **50.47%**; while DR–Method B derived total skin doses ranging from **2.782 rem** to **7.990 rem** resulting in a POC of **52%**.

As shown in Table ES-2, most of the **external doses** derived by Method A and Method B are similar or identical. Two key differences between the two methods are (1) Method A assigned an occupational environmental dose for a portion of the EE’s employment at X-10 that was not assessed by Method B; and (2) Method B derived a missed shallow dose that may have resulted from the direct deposition of uranium dust onto skin/clothing and a missed neutron dose for the EE’s employment at Y-12 that were not considered in DR–Method A. The difference in the X-10 occupational medical doses between the two methods was the result of Method A assessing dose for only the nine x-ray exams identified in the DOE records, while Method B assumed an annual x-ray exam for each year of employment at X-10 (i.e., [REDACTED] through [REDACTED]).

With regard to **internal doses**, DR–Method A calculated a significantly higher internal dose for the EE’s employment at Y-12, because this method used the lung count data to derive doses for exposure to thorium, uranium, and associated radionuclides. Method B calculated dose to only U-234 based on urinalyses results. For assessing internal dose during the EE’s employment at X-10, both methods assigned coworker dose using guidance in ORAUT-OTIB-0034. The differences in dose reflect the decision by Method A to calculate internal dose assuming Type S solubility for Sr-90 (and associated radionuclides) and Type Super S (SS) for Pu-239, while Method B assumed Type F solubility for Sr-90 and associated radionuclides and Type M solubility for all other radionuclides (i.e., U-234, Pu-239 and Am-241).

A detailed description of the DR approach used by SC&A’s Method A is provided in Section I. Section II of this report describes the derivation of external and internal doses using SC&A’s DR–Method B. For the benefit of the reader, Table ES-3 also summaries the approach used by the two SC&A methods for calculating doses for each of the dose elements considered in this DR.

Table ES-2. Derived Dose Estimates

	DR – Method A							DR – Method B						
	(Numbers represent cancers listed in Table ES-1)													
	#1 Dose (rem)	#2 Dose (rem)	#3 &4 Dose (rem)	#5 Dose (rem)	#6 Dose (rem)	#7 Dose (rem)	#8 Dose (rem)	#1 Dose (rem)	#2 Dose (rem)	#3 &4 Dose (rem)	#5 Dose (rem)	#6 Dose (rem)	#7 Dose (rem)	#8 Dose (rem)
External Dose (Occupational):*														
▪ Recorded Photon Dose														
30–250 keV Photons, Y-12	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142
30–250 keV Photons, X-10	0.020	0.020	0.020	0.020	0.020	0.020	0.020	–	–	–	–	–	–	–
▪ Missed Photon Dose														
30–250 keV Photons, Y-12	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165
30–250 keV Photons, X-10	0.835	0.835	0.835	0.835	0.835	0.835	0.835	0.920	0.920	0.920	0.920	0.920	0.920	0.920
▪ Recorded Shallow Dose														
e ⁻ >15 keV, Y-12	0.685	0.586	0.685	0.586	0.586	0.685	0.685	0.637	0.545	0.637	0.545	0.637	0.637	0.637
e ⁻ >15 keV, X-10	0.070	0.060	0.070	0.060	0.060	0.070	0.070	–	–	–	–	–	–	–
▪ Missed Shallow Dose from Skin Deposition e ⁻ >15 keV, Y-12	–	–	–	–	–	–	–	0.280	0.280	0.280	0.280	0.280	0.280	0.280
▪ Missed Neutron Dose η 100 keV–2 MeV, Y-12	–	–	–	–	–	–	–	0.224	0.224	0.224	0.224	0.224	0.224	0.224
▪ Occupational Medical Dose														
Y-12	0.022	0.824	0.095	0.945	0.021	0.022	0.095	0.026	1.080	0.108	1.080	0.108	0.026	0.108
X-10	0.049	0.148	0.148	1.479	0.050	0.049	0.148	0.148	0.433	0.433	4.354	0.148	0.148	0.433
▪ Occupational Envir. Dose														
Photon, X-10	0.148	0.148	0.148	0.148	0.148	0.148	0.148	–	–	–	–	–	–	–
Internal Dose (Occupational):														
(Method A) Th, U, RU, missed, Y-12 (Method B) U, Y-12	0.951	1.091	1.148	1.148	1.177	1.177	1.206	0.065	0.073	0.077	0.077	0.078	0.078	0.080
Coworker, e ⁻ >15 keV, X-10	0.970	0.973	0.973	0.973	0.973	0.973	0.973	0.045	0.045	0.045	0.045	0.045	0.045	0.045
Coworker, U-234, X-10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	–	–	–	–	–	–	–
Coworker, Pu & Am, X-10	0.200	0.256	0.280	0.280	0.291	0.291	0.303	0.130	0.153	0.158	0.158	0.158	0.158	0.160
Total	4.258	5.249	4.710	6.782	4.469	4.578	4.791	2.782	4.060	3.189	7.990	2.905	2.823	3.194

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Table ES-3. Summary of Approach Used by SC&A's Methods A and B to Calculate External and Internal Doses

Dose Element	SC&A's DR-Method A		SC&A's DR-Method B	
	Y-12	X-10	Y-12	X-10
Recorded Photon Dose	Used DOE records, Y-12 TBD, and ORAUT-OTIB-0017 guidance. Assumed DCF = 1 and 100% 30–250 keV. IREP = Constant distribution.	Used DOE records, X-10 TBD, and OTIB-0017 guidance. Assumed DCF = 1; 100% 30–250 keV. IREP = Constant distribution.	Used DOE records, Y-12 TBD, OCAS-IG-001 and OTIB-0017 guidance. Assumed DCF = 1 and 100% 30–250 keV. IREP = Normal distribution; 30% uncertainty.	No recorded doses assigned. Based on DOE records, all doses were considered as missed photon dose.
Missed Photon Dose	Used DOE records to identify 11 zero or <LOD/2 values; DCF = 1; 100% 30–250 keV. IREP = Lognormal distribution with GSD = 1.52 based on OCAS-IG-001 guidance.	Used DOE records to identify 125 zero or <LOD/2 values; DCF = 1; 100% 30–250 keV. IREP = Log-normal distribution with GSD=1.52 based on OCAS-IG-001 guidance.	Used DOE records and OTIB-0017 to identify 11 zero or <LOD/2 values; DCF = 1; 100% 30–250 keV. IREP = Lognormal distribution with GSD=1.52 based on OCAS-IG-001 guidance.	Used DOE records to identify 140 zero or <LOD/2 values; DCF = 1; 100% 30–250 keV. IREP = Log-normal distribution with GSD = 1.52 based on OCAS-IG-001 guidance.
Recorded Shallow Dose	Used DOE records, Y-12 TBD, and OTIB-0017 guidance. Shallow minus Deep dose. Assumed DCF = 1 and 100% E>15 keV. IREP = Constant distribution.	Used DOE records, X-10 TBD, and OTIB-0017. Shallow minus Deep dose. Assumed DCF = 1; 100% E>15 keV. IREP = Constant distribution.	Used DOE records, and OTIB-0017 guidance. Shallow minus Deep dose. Assumed DCF = 1 and 100% E>15 keV. IREP = Normal distribution with 30% uncertainty.	No recorded doses assigned. Based on DOE records and OTIB-0017, all doses were considered missed and assigned as 30–250 keV under missed photon dose.
Missed Shallow Dose	Not Considered	Not Considered	Assumed potential skin exposure from direct deposition of uranium dust on skin/clothing. Dose based on EE's urinalysis data.	Not Considered
Missed Neutron Dose	Not Considered	Not Considered	Assigned missed neutron doses for zero readings in DOE records. Used neutron-to-photon ratios from Table 6-13 of Y-12 TBD along with ICRP CF of 1.91. IREP = Lognormal distribution with GSD of 1.52.	Not Considered
Occupational Medical Dose	No records. Assumed annual x-rays based on Y-12 TBD doses and PROC-0061 projections. IREP = Normal distribution with 30% uncertainty.	Assumed 9 x-ray exams based on DOE records. Used X-10 TBD doses and ORAUT-PROC-0061 projections. IREP = Normal distribution with 30% uncertainty.	Assumed annual x-rays based on Y-12 TBD guidance and doses and selected body location based on ORAUT-OTIB-0006 IREP = Normal distribution with 30% uncertainty.	Assumed annual x-rays based on Table 3-6 of the X-10 TBD and guidance in ORAUT-OTIB-0006, Table A-1. IREP = Normal distribution with 30% uncertainty.
Occupational Environmental Dose	Not Considered	Calculated for 2 unmonitored years based on ORAUT-PROC-0060 and doses from X-10 TBD, Attachment 4C	Not Considered	Not Considered

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Table ES-3. Summary of Approach Used by SC&A's Methods A and B to Calculate External and Internal Doses

Dose Element	SC&A's DR-Method A		SC&A's DR-Method B	
	Y-12	X-10	Y-12	X-10
Internal Dose	Calculated thorium and U-234 (and associated radionuclides) based on lung count data. Used Y-12 TBD MDA values and Type M solubility.	Used coworker model (ORAUT-OTIB-0034). Calculated Sr-90 (and associated radionuclides (Type S); U-234 (Type M); Pu-239 (Type SS); Am-241 (Type M)	Calculated uranium based on the EE's gross alpha bioassay results, MDL values in Y-12 TBD, and guidance in ORAUT-OTIB-0060. Assumed Type S solubility.	Used coworker model (ORAUT-OTIB-0034). Calculated Sr-90 (and associated radionuclides) assuming Type F, and Type M solubility for U-234, Pu-239, and Am-241.

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SECTION I: DR–METHOD A

I.1 DOSE RECONSTRUCTION OVERVIEW

This report presents the results of an independent blind dose reconstruction (DR) performed by S. Cohen & Associates (SC&A) for an energy employee (EE) who worked at the National Security Complex (Y-12) from [REDACTED] through [REDACTED] and the Oak Ridge National Laboratory (X-10) from [REDACTED] to [REDACTED].

The EE was diagnosed with eight skin cancers of the [REDACTED] and [REDACTED] between [REDACTED] and [REDACTED] [basal cell carcinomas (BCCs) and squamous cell carcinomas (SCCs)]. All cancers were primary cancers, as shown in Table I-1.

Table I-1. Cancers and Diagnosis Date

#	Description	Diagnosis Date	ICD-9 Code
1	SCC [REDACTED]	[REDACTED]	[REDACTED]
2	SCC [REDACTED]	[REDACTED]	[REDACTED]
3	BCC [REDACTED]	[REDACTED]	[REDACTED]
4	BCC [REDACTED]	[REDACTED]	[REDACTED]
5	BCC [REDACTED]	[REDACTED]	[REDACTED]
6	BCC [REDACTED]	[REDACTED]	[REDACTED]
7	SCC [REDACTED]	[REDACTED]	[REDACTED]
8	SCC [REDACTED]	[REDACTED]	[REDACTED]

According to the Computer-Assisted Telephone Interview (CATI) Report, the EE was an [REDACTED] at these facilities. The EE was monitored for external photon and electron exposure during most of the employment period at both Y-12 and X-10, and had lung counts at Y-12, but only [REDACTED] bioassay recorded at X-10.

I.1.1 SC&A Blind DR–Method A Approach

SC&A reviewed all of the Department of Energy (DOE) records provided on behalf of this employee and the NIOSH procedures relevant to this case, which included the Technical Basis Documents (TBDs) for Y-12 (ORAUT-TKBS-0014-3, -5, and -6), X-10 (ORAUT-TKBS-0012-3, -4, -5, and -6); Technical Information Bulletins (TIBs) ORAUT-OTIB-0017 concerning shallow doses and ORAUT-OTIB-0006; and ORAUT-PROC-0061 for occupational x-ray doses. Using the guidance provided in these documents, along with the EE’s dosimetry records, SC&A manually calculated reasonable, claimant-favorable annual organ doses for each of the eight cancers, as shown in Table I-2. Appendices I.A-1 through I.A-8 provide a list of SC&A’s annual organ doses and also include the Interactive RadioEpidemiological Program (IREP) input parameters, such as energy range, distribution type, and uncertainty for each year.

SC&A determined the probability of causation (POC) for this case using annual doses shown in Appendices I.A-1 through I.A-8 as input into the IREP program. The total external and internal doses shown in Table I-2 produced a POC of **50.47%**.

Table I-2. Summary of SC&A-Derived External/Internal Dose Estimates

	#1 IREP entry	#1 Dose (rem)	#2 IREP entry	#2 Dose (rem)	#3, #4, & #5 IREP entry	#3 & #4 Dose (rem)	#5 Dose (rem)	#6 & #7 IREP entry	#6 Dose (rem)	#7 Dose (rem)	#8 IREP entry	#8 Dose (rem)
External Dose (Occupational):*												
▪ Recorded Photon Dose												
30–250 keV Photons, Y-12	1–2	0.142	1–2	0.142	1–2	0.142	0.142	1–2	0.142	0.142	1–2	0.142
30–250 keV Photons, X-10	15	0.020	15	0.020	15	0.020	0.020	15	0.020	0.020	15	0.020
▪ Missed Photon Dose												
30–250 keV Photons, Y-12	7–10	0.165	7–10	0.165	7–10	0.165	0.165	7–10	0.165	0.165	7–10	0.165
30–250 keV Photons, X-10	18–49	0.835	18–49	0.835	18–49	0.835	0.835	18–49	0.835	0.835	18–49	0.835
▪ Recorded Shallow Dose												
e ⁻ >15 keV, Y-12	3–6	0.685	3–6	0.586	3–6	0.685	0.586	3–6	0.586	0.685	3–6	0.685
e ⁻ >15 keV, X-10	16–17	0.070	16–17	0.060	16–17	0.070	0.060	16–17	0.060	0.070	16–17	0.070
▪ Occupational Medical Dose												
Y-12	11–14	0.022	11–14	0.824	11–14	0.095	0.945	11–14	0.021	0.022	11–14	0.095
X-10	50–58	0.049	50–58	0.148	50–58	0.148	1.479	50–58	0.050	0.049	50–58	0.148
▪ Occupational Envir. Dose												
Photon, X-10	59–60	0.148	59–60	0.148	59–60	0.148	0.148	59–60	0.148	0.148	59–60	0.148
Internal Dose (Occupational):												
Th, U, and RU, missed, Y-12	61–99	0.951	61–104	1.091	61–106	1.148	1.148	61–107	1.177	1.177	61–108	1.206
Coworker, e ⁻ >15 keV, X-10	100–135	0.970	105–145	0.973	107–149	0.973	0.973	108–151	0.973	0.973	109–153	0.973
Coworker, U-234, X-10	136–171	0.001	146–186	0.001	150–192	0.001	0.001	152–195	0.001	0.001	154–198	0.001
Coworker, Pu & Am, X-10	172–260	0.200	187–290	0.256	193–302	0.280	0.280	196–308	0.291	0.291	199–314	0.303
Total		4.258		5.249		4.710	6.782		4.469	4.578		4.791

*This table is limited to doses reconstructed based on external exposures “at a distance,” as measured by film badges, and does not include skin exposures that may have resulted from direct skin contamination.

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I.2 EXTERNAL DOSES

To perform this DR, SC&A analyzed the DOE files containing the details of the individual badge cycles, and also the summary reports from Y-12 and X-10, and compared them to the *External Dosimetry Data* file supplied to SC&A by NIOSH for this case. The summary reports, the individual badge cycle data, and NIOSH's *External Dosimetry Data* file agreed with each other.

In the sections that follow, a description is provided of how SC&A reconstructed the dose considering the recorded photon and beta doses and missed doses.

I.2.1 Recorded Photon and Electron Doses

The organ dose conversion factor (Organ DCF) of 1.00 was applied to the skin, and all electron doses are assumed to be associated with the >15 keV energy range, in accordance with ORAUT-OTIB-0017. Because of their location, no clothing attenuation was used for the cancer sites on [REDACTED] (#1, #3, #4, #7, and #8), but a clothing attenuation factor of 0.855 (ORAUT-OTIB-0017) was used for the cancer sites on the [REDACTED], [REDACTED], and [REDACTED] (#2, #5, and #6). SC&A used 100% AP exposure geometry for recorded and missed dose for this case as per ORAUT-TKBS-0014-6 and ORAUT-TKBS-0012-6.

Y-12 Recorded Photon Dose

The DOE records show that this EE was monitored on a quarterly basis for the entire Y-12 employment period during [REDACTED]–[REDACTED], and that the EE received a small amount of positive recorded photon and electron dose. SC&A's Method A used the guidance described in *Y-12 National Security Complex – Occupational External Dosimetry* (ORAUT-TKBS-0014-6) and the *Technical Information Bulletin: Interpretation of Dosimetry Data for Assignment of Shallow Dose* (ORAUT-OTIB-0017) in order to derive the organ doses from this exposure.

Example of [REDACTED] recorded photon dose calculations: SC&A calculated the [REDACTED] photon dose to the skin as follows:

Records show that for [REDACTED], the EE received a deep dose (D) of 0.027 rem; of which 0.027 rem was \geq LOD/2 value of 0.015 rem (ORAUT-TKBS-0014-6, Table 6-3, page 18).

$$\begin{aligned} \text{Skin Dose (30–250 keV)} &= D \times \text{DCF} \times \text{Energy Fraction (EF)} \\ &= 0.027 \times 1.0 \times 1.0 \\ &= 0.027 \text{ rem} \end{aligned}$$

SC&A's Method A calculated [REDACTED] 30–250 keV dose of 0.027 rem is listed in entry #1 of the IREP Input tables, as shown in each of the Appendices I.A-1 through I.A-8.

The recorded photon doses were entered into IREP as a constant distribution with no uncertainty. The total recorded photon dose assignments for the eight cancer sites are summarized in Table I-2 above, and detailed in Appendices I.A-1 through I.A-8.

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X-10 Recorded Photon Dose

The DOE records show that this EE was monitored on a quarterly basis for the entire employment period during [REDACTED]–[REDACTED] except for [REDACTED] and [REDACTED], and the EE received mostly zero recorded doses except for a small shallow dose recorded for [REDACTED] and [REDACTED], and a small deep dose recorded for [REDACTED]. SC&A used the guidance described in the *Oak Ridge National Laboratory – Occupational External Dose* (ORAUT-TKBS-0012-6) and ORAUT-OTIB-0017 in order to derive the organ doses from this exposure.

Example of [REDACTED] recorded photon dose calculations: SC&A calculated the [REDACTED] photon dose to the skin as follows:

Records show that for [REDACTED], the EE received a deep dose (D) of 0.020 rem, of which 0.020 rem was \geq LOD/2 value of 0.015 rem (ORAUT-TKBS-0012-6, Table 6-24, page 70).

$$\begin{aligned} \text{Skin Dose (30–250 keV)} &= D \times \text{DCF} \times \text{EF} \\ &= 0.020 \times 1.0 \times 1.0 \\ &= 0.020 \text{ rem} \end{aligned}$$

SC&A’s Method A calculated [REDACTED] 30–250 keV doses of 0.020 rem as listed in entry #15 of the IREP Input tables shown in each of the Appendices I.A-1 through I.A-8.

The recorded photon dose was entered into IREP as a constant distribution with no uncertainty. The total recorded photon dose assignments for the eight cancer sites are summarized in Table I-2 above and detailed in Appendices I.A-1 through I.A-8.

Y-12 Recorded Electron Skin Dose

Electron dose was assigned to the skin because of the locations of the cancer sites. The electron dose was the difference between the *Shallow* recorded dose and the *Deep* recorded dose for both the Y-12 and X-10 sites.

Example of [REDACTED] recorded electron dose calculations: DR–Method A calculated the [REDACTED] electron dose to the skin as follows:

Records show that for [REDACTED], the EE received a deep dose (D) of 0.011 rem, of which 0.000 rem was \geq LOD/2, and a shallow dose of 0.081 rem, of which 0.081 rem was \geq LOD/2. The electron dose to the skin was assumed to be 100% $e^- > 15$ keV. A skin DCF of 1.0 was applied. For cancer sites on the [REDACTED], [REDACTED], and [REDACTED], a clothing attenuation factor of 0.855 was also applied.

$$\begin{aligned} \text{Unattenuated Electron Skin Dose (>15 keV)} &= (\text{Shallow} - \text{Deep}) \times \text{DCF} \\ &= (0.081 \text{ rem} - 0.000 \text{ rem}) \times 1.0 \\ &= 0.081 \text{ rem} \end{aligned}$$

$$\begin{aligned} \text{Attenuated Electron Skin Dose (>15 keV)} &= (\text{Shallow} - \text{Deep}) \times \text{DCF} \times \text{Atten. Factor} \\ &= (0.081 \text{ rem} - 0.000 \text{ rem}) \times 1.0 \times 0.855 \\ &= 0.069 \text{ rem} \end{aligned}$$

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Method A's calculated [REDACTED] >15 keV electron skin dose of 0.081 rem is listed in entry #3 of the IREP Input tables shown in Appendices I.A-1, I.A-3, I.A-4, I.A-7, and I.A-8. The attenuated skin dose of 0.069 rem is shown in entry #3 of Appendices I.A-2, I.A-5, and I.A-6.

The recorded electron doses were entered into IREP as a constant distribution with no uncertainty. The total recorded electron dose assignments for the eight skin cancer sites are summarized in Table I-2 above and detailed in Appendices A-1 through A-8.

X-10 Recorded Electron Skin Dose

The measured electron dose for X-10 was calculated similar to the Y-12 electron doses.

Example of [REDACTED] recorded electron dose calculations: SC&A calculated the [REDACTED] electron dose to the skin as follows:

Records show that for [REDACTED], the EE received a deep dose (D) of 0.020 rem, of which 0.020 rem was \geq LOD/2, and a shallow dose of 0.070 rem, of which 0.070 rem was \geq LOD/2. The electron dose to the skin was assumed to be 100% e⁻ >15 keV. A skin DCF of 1.0 was applied. For cancer sites on the [REDACTED], [REDACTED], and [REDACTED], a clothing attenuation factor of 0.855 was also applied.

$$\begin{aligned} \text{Unattenuated Electron Skin Dose (>15 keV)} &= (\text{Shallow} - \text{Deep}) \times \text{DCF} \\ &= (0.070 \text{ rem} - 0.020 \text{ rem}) \times 1.0 \\ &= 0.050 \text{ rem} \end{aligned}$$

$$\begin{aligned} \text{Attenuated Electron Skin Dose (>15 keV)} &= (\text{Shallow} - \text{Deep}) \times \text{DCF} \times \text{Atten. Factor} \\ &= (0.070 \text{ rem} - 0.020 \text{ rem}) \times 1.0 \times 0.855 \\ &= 0.043 \text{ rem} \end{aligned}$$

DR-Method A's calculated [REDACTED] >15 keV electron skin dose of 0.050 rem is listed in entry #17 of the IREP Input tables shown in Appendices I.A-1, I.A-3, I.A-4, I.A-7, and I.A-8. The attenuated skin dose of 0.043 rem is shown in entry #17 of Appendices I.A-2, I.A-5, and I.A-6.

The recorded electron doses were entered into IREP as a constant distribution with no uncertainty. The total recorded electron dose assignments for the eight skin cancer sites are summarized in Table I-2 above, and detailed in Appendices A-1 through A-8.

I.2.2 Missed Photon and Electron Doses

SC&A analyzed the number of zeros in the EE's DOE badge cycle data using the guidance in OCAS-IG-001, page 16, and a best-estimate reasonable approach, and compared them to those provided by the *Y-12 Workbook 2.02* and *X-10 Workbook 2.04* (which was populated by SC&A using the external dose data spreadsheet provided by NIOSH). SC&A arrived at a total of 11 zeros, or <LOD/2, values for photons at Y-12, and 125 zeros, or <LOD/2, values for photons at X-10. SC&A's numbers and those provided by the workbooks were in agreement.

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Y-12 Missed Photon Dose

SC&A calculated the [REDACTED] missed photon dose to the skin as follows:

SC&A found [REDACTED] zeros for [REDACTED]; i.e., [REDACTED] readings were recorded that were less than the LOD/2. The limit of detection (LOD) for the time period was 0.030 rem, making the LOD/2 equal to 0.015 rem.

$$\begin{aligned} \text{Missed Skin Photon Dose (30–250 keV)} &= (\# \text{ zeros} \times \text{LOD}/2) \times \text{DCF} \\ &= (3 \times 0.015 \text{ rem}) \times 1.0 \\ &= 0.045 \text{ rem} \end{aligned}$$

SC&A's calculated 30–250 keV missed photon dose of 0.045 rem is shown in entry #8 of the IREP Input tables, as shown in each of the Appendices I.A-1 through I.A-8.

The missed photon doses were entered into IREP as a lognormal distribution with an uncertainty of 1.520. The total missed photon dose assignments are summarized in Table I-2 above and detailed in Appendices I.A-1 through I.A-8.

X-10 Missed Photon Dose

SC&A calculated the [REDACTED] missed photon dose to the skin as follows:

SC&A found [REDACTED] zeros for [REDACTED]; i.e., [REDACTED] readings were recorded that were less than the LOD/2. The LOD for the time period was 0.030 rem, making the LOD/2 equal to 0.015 rem.

$$\begin{aligned} \text{Missed Skin Photon Dose (30–250 keV)} &= (\# \text{ zeros} \times \text{LOD}/2) \times \text{DCF} \\ &= (4 \times 0.015 \text{ rem}) \times 1.0 \\ &= 0.060 \text{ rem} \end{aligned}$$

SC&A's Method A calculated 30–250 keV missed photon dose of 0.060 rem is shown in entry #19 of the IREP Input tables, as shown in each of the Appendices, I.A-1 through I.A-8.

The missed photon doses were entered into IREP as a lognormal distribution with an uncertainty of 1.520. The total missed photon dose assignments are summarized in Table I-2 above and detailed in Appendices I.A-1 through I.A-8.

I.2.3 Neutron Dose

Y-12 Neutron Dose

Although the EE's records show zero neutron doses for all badged periods at Y-12, the EE most likely was not exposed to significant neutrons and no neutron dose should be assigned, as per ORAUT-OTIB-0045.

X-10 Neutron Dose

The EE was not monitored for neutrons at X-10, and considering the EE's position as an engineer and the mostly all zero recorded photon doses, it is likely that the EE was not exposed to significant neutron doses.

I.2.4 Occupational Medical Dose

Y-12 X-ray Doses

There were no x-ray exam records in the EE's files for the Y-12 facility; the EE stated in the CATI Report that he had annual x-ray exams. Therefore, ORAUT-TKBS-0014-3, ORAUT-OTIB-0006, and ORAUT-PROC-0061 were consulted for the appropriate projections and doses. DR–Method A used the projections for the various skin cancer locations recommended in Tables C-1, page 16, and C-2, page 19, of ORAUT-PROC-0061, and the corresponding annual dose values in Tables A-3 and A-4, pages 22–23, of ORAUT-TKBS-0014-3. These projections and doses are summarized in Table I-3. An annual x-ray exam was assumed.

X-10 X-ray Doses

The DOE records show that the EE received nine PA x-ray exams during the employment period of [REDACTED]–[REDACTED]. ORAUT-TKBS-0012-3, ORAUT-OTIB-0006, and ORAUT-PROC-0061 were consulted for the appropriate projections and doses. SC&A used the projections for the various skin cancer locations recommended in Tables C-1, page 16, and C-2, page 19, of ORAUT-PROC-0061, and the corresponding annual dose values in Table 3-6, page 23, of ORAUT-TKBS-0012-3. These projections and doses are summarized in Table I-3.

Table I-3. Medical X-ray Parameters and Doses

#	Description	Diagnosis Date	PROC-61 Projection	Y-12 Total Dose (rem)	X-10 Total Dose (rem)
1	SCC [REDACTED]	[REDACTED]	[REDACTED]	0.022	0.049
2	SCC [REDACTED]	[REDACTED]	[REDACTED]	0.824	0.148
3	BCC [REDACTED]	[REDACTED]	[REDACTED]	0.095	0.148
4	BCC [REDACTED]	[REDACTED]	[REDACTED]	0.095	0.148
5	BCC [REDACTED]	[REDACTED]	[REDACTED]	0.945	1.479
6	BCC [REDACTED]	[REDACTED]	[REDACTED]	0.021	0.050
7	SCC [REDACTED]	[REDACTED]	[REDACTED]	0.022	0.049
8	SCC [REDACTED]	[REDACTED]	[REDACTED]	0.095	0.148

The annual occupational medical dose values were entered into IREP as a normal distribution with 30% uncertainty and a photon energy range of 30–250 keV.

I.2.5 Onsite Ambient Dose

Y-12

SC&A's DR–Method A found that the EE was monitored for all periods during the Y-12 employment; therefore, according to ORAUT-PROC-0060, Attachment A, page 14, no external ambient dose should be assigned in this case.

X-10

DR–Method A found that the EE was monitored for most periods during the X-10 employment except during the years [REDACTED] and [REDACTED], for which the EE's DOE files were blank. Therefore, according to ORAUT-PROC-0060, Attachment A, page 14, no external ambient dose should be assigned, except for these 2 years.

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DR–Method A assigned environmental ambient doses for the two unmonitored years using the mrem per hours dose values recommended in Attachment 4C, page 41, of ORAUT-TKBS-0012-4, adjusting for 2,500 hr/year, and arrived at a total external ambient dose of 0.073 rem for [REDACTED] and 0.075 rem for [REDACTED]. These dose values are assigned in entries #59 and #60, respectively, of the IREP Input tables, as shown in Appendices I.A-1 through I.A-8.

I.3 INTERNAL DOSES

The EE had annual recorded lung counts at Y-12 and one whole body count at X-10.

I.3.1 Y-12 Internal Thorium and Uranium Doses

The EE was bioassayed yearly for thorium and uranium by lung counts at Y-12, with the last lung count performed on [REDACTED]; all results were less than the minimum detection activity (MDA).

Thorium

Th-232

DR–Method A used one-half of the Th-232 MDA value of 0.6 nCi from ORAUT-TKBS-0014-5, page 34, on [REDACTED], in the Integrated Modules of Bioassay Analysis (IMBA) program to project a chronic intake during the period [REDACTED], through [REDACTED], of 100.9 dpm/d of Type M Th-232; Type S Th-232 was projected to be 26.14 dpm/d. These intakes were entered into the chronic annual dose workbook (CADW) to determine the dose to the skin.

Th-228

SC&A’s Method A used the recommended Th-228/Th-232 value of 0.8 found on page 34 of ORAUT-TKBS-0014-5 to arrive at a potential intake of 80.72 dpm/d of Type M, and 20.912 dpm/d of Type S Th-228. These intakes were entered into the CADW to determine the dose to the skin.

U-234 and Associated Radionuclides

SC&A’s Method A used one-half of the U-235 MDA value of 360 dpm from ORAUT-TKBS-0014-5, Table 5-11, page 33, as U-234 (because it is claimant favorable) in the IMBA program to project a chronic intake during the period [REDACTED], through [REDACTED], of 27.277 dpm/d of Type M U-234. Type S U-234 was projected to be 7.065 dpm/d. These intakes were entered into the CADW to determine the dose to the skin.

Np-237 was also analyzed using the lung counts, with an MDA of 0.255 nCi, from ORAUT-TKB-0014-5, page 34. This was also analyzed using the IMBA program with a projected intake of 283.0 dpm of Type M Np-237. This was also entered into the CADW to determine the dose to the skin.

Recycled uranium was potentially present; therefore, it was accounted for by using the default very highly enriched uranium (VHEU) and Oralloy uranium ratio values recommended in Table 5-8, page 22, of ORAUT-TKBS-0014-5. Technetium-99 was the only electron emitter present; the total dose was <0.001 rem/year and not included in the IREP Input tables.

NOTICE: This report has been reviewed for Privacy Act information and has been cleared for distribution. However, this report is pre-decisional and has not been reviewed by the Advisory Board on Radiation and Worker Health for factual accuracy or applicability within the requirements of 42 CFR 82.

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The total alpha doses from these radionuclides were summed and listed in the IREP Input tables, starting with entry #61, for each cancer site. It was found that Type M provided for the greater dose for each of the radionuclides; therefore, dose from Type M solubility was used.

Observation:

SC&A has analyzed the use of lung counts at Y-12 to project thorium intake as recommended in ORAUT-TKBS-0014-5 and OCAS-PER-031 and found that the recommended method is not technically sound; SC&A provided a report to NIOSH, which details our concerns, on July 15, 2013. It should also be noted that Y-12 chest count data are identical to those deemed inadequate for DR at Fernald, which provided the basis for awarding an SEC at Fernald for 1968–1978.

I.3.2 X-10 Internal Doses

The EE had only one whole-body count at X-10 on [redacted], with all radionuclides below the MDA values. Because the EE was continuously monitored for external exposures, there was a potential for internal exposure; therefore, DR–Method A assigned coworker intakes in this case. If the EE had only been occasionally monitored for external exposure, then environmental intakes may have been appropriate. SC&A’s Method A used the recommended coworker intakes in ORAUT-OTIB-0034 for Sr-90 (and related radionuclides), U-234, Pu-239, and Am-241.

Sr-90 and Associated Radionuclides

Method A used the coworker Sr-90 intake values recommended in Tables 5-1 and 5-2, page 10, of ORAUT-OTIB-0034 for Type F and Type S Sr-90 (along with the intake values for associated radionuclides of Ru-106, Cs-137, and Ce-144 determined by using the Sr-90 ratios from Table 5-7, page 15 of ORAUT-OTIB-0034) in the CADW to derive the dose to the skin. As per Section 5.2, page 11, of ORAUT-TKBS-0014-5, SC&A compared the dose derived from Type M and Type S Sr-90 and found that Type S provided for the greater dose to the skin. The annual doses from these electron emitters were entered into the IREP program as $e^- > 15$ keV, with a lognormal distribution, and a geometric standard deviation (GSD) of 3.00. The total dose ranged between 0.970 rem and 0.973 rem, depending on the cancer and the year it was diagnosed.

U-234

Method A used the coworker U-234 intake values recommended in Table 5-3, page 11, of ORAUT-OTIB-0034 for Type F and Type M U-234 in the CADW to derive the dose to the skin. SC&A compared the dose derived from Type F and Type M U-234 and found that Type M provided for the greater dose to the skin. The annual alpha dose was entered into the IREP program, with a lognormal distribution, and a GSD of 3.33. The total dose was approximately 0.001 rem to each cancer site.

Pu-239 and Am-241

SC&A’s DR–Method A used the coworker Pu-239 intake values recommended in Table 5-4, page 12, of ORAUT-OTIB-0034 for Type M and Type S Pu-239 in the CADW to derive the dose to the skin. SC&A compared the dose derived from Type M and Type S Pu-239 and found that Type S provided for the greater dose to the skin. The annual doses from Type S Pu-239 were appropriately adjusted by using ORAUT-OTIB-0049 for Type SS plutonium.

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Method A used the coworker Am-241 intake values recommended in Table 5-6, page 13, of ORAUT-OTIB-0034 for Type M in the CADW to derive the dose to the skin.

The total Pu-239 and Am-241 annual alpha doses were entered into the IREP program with a lognormal distribution. The total dose ranged from 0.230 rem to 0.303 rem, depending on the cancer and year it was diagnosed.

I.3.3 Environmental Internal Dose

Because the EE was assigned missed internal dose for Y-12 and coworker dose for X-10, no environmental internal dose was assigned.

I.4 CATI REPORT AND RADIOLOGICAL INCIDENTS

SC&A's DR—Method A reviewed the EE's DOE records and CATI Report to determine if the EE was involved in any radiological incidents. Method A did not find any documentation of radiological incidents that would impact the external radiation doses assigned in this case.

I.5 SUMMARY CONCLUSIONS

This DR used best-estimate methods to obtain reasonable external and internal dose assignments. These derived doses provided for a POC >50.

The total POC for the eight multiple primary cancers was calculated using the IREP (v.5.7) and was determined to be **50.47%**.

I.6 REFERENCES

OCAS-IG-001. 2007. *External Dose Reconstruction Implementation Guideline*, Rev. 3, National Institute for Occupational Safety and Health, Office of Compensation Analysis and Support, Cincinnati, Ohio. November 21, 2007.

OCAS-PER-031. 2007. *Y-12 TBD Revisions*, Rev. 00, National Institute for Occupational Safety and Health, Office of Compensation Analysis and Support, Cincinnati, Ohio. December 18, 2007.

ORAUT-OTIB-0006. 2011. *Dose Reconstruction from Occupationally Medical X-ray Procedures*, Rev. 04, Oak Ridge Associated Universities Team, Cincinnati, Ohio. June 20, 2011.

ORAUT-OTIB-0017. 2005. *Technical Information Bulletin: Interpretation of Dosimetry Data for Assignment of Shallow Dose*, Rev. 01, Oak Ridge Associated Universities Team, Cincinnati, Ohio. October 11, 2005.

ORAUT-OTIB-0034. 2011. *Technical Information Bulletin: Internal Dosimetry Coworker Data for X-10*, Rev. 01, Oak Ridge Associated Universities, Cincinnati, Ohio. April 23, 2013.

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ORAUT-OTIB-0045. 2009. *Technical Information Bulletin: Historical Evaluation of the Film Badge Dosimetry Program at the Y-12 Plant in Oak Ridge, Tennessee: Part 2–Neutron Radiation*, Rev. 01, Oak Ridge Associated Universities, Cincinnati, Ohio. November 30, 2009.

ORAUT-OTIB-0049. 2010. *Technical Information Bulletin: Estimating Doses for Plutonium Strongly Retained in the Lung*, Rev. 01 PC-2, Oak Ridge Associated Universities, Cincinnati, Ohio. November 29, 2010.

ORAUT-PROC-0060. 2006. *Occupational On-Site Ambient Dose Reconstruction for DOE Sites*, Rev. 01, Oak Ridge Associated Universities Team, Cincinnati, Ohio. June 28, 2006.

ORAUT-PROC-0061. 2010. *Occupational X-Ray Dose Reconstruction for DOE Sites*, Rev. 03, Oak Ridge Associated Universities Team, Cincinnati, Ohio. March 3, 2010.

ORAUT-TKBS-0012-3. 2007. *Technical Basis Document for the Oak Ridge National Laboratory – Occupational Medical Dose*, Rev. 02, Oak Ridge Associated Universities, Cincinnati, Ohio. October 1, 2007.

ORAUT-TKBS-0012-4. 2004. *Technical Basis Document for the Oak Ridge National Laboratory – Occupational Environmental Dose*, Rev. 00, Oak Ridge Associated Universities, Cincinnati, Ohio. May 7, 2004.

ORAUT-TKBS-0012-5. 2013. *Technical Basis Document for the Oak Ridge National Laboratory – Occupational Internal Dose*, Rev. 02, Oak Ridge Associated Universities, Cincinnati, Ohio. February 8, 2013.

ORAUT-TKBS-0012-6. 2007. *Technical Basis Document for the Oak Ridge National Laboratory – Occupational External Dose*, Rev. 01, Oak Ridge Associated Universities, Cincinnati, Ohio. September 10, 2007.

ORAUT-TKBS-0014-3. 2007. *Technical Basis Document for the Y-12 National Security Complex – Occupational Medical Dose*, Rev. 01, Oak Ridge Associated Universities Team, Cincinnati, Ohio. June 18, 2007.

ORAUT-TKBS-0014-5. 2012. *Technical Basis Document for the Y-12 National Security Complex – Occupational Internal Dose*, Rev. 03, Oak Ridge Associated Universities Team, Cincinnati, Ohio. March 12, 2012.

ORAUT-TKBS-0014-6. 2009. *Technical Basis Document for the Y-12 National Security Complex – Occupational External Dose*, Rev. 02, Oak Ridge Associated Universities Team, Cincinnati, Ohio. December 18, 2009.

APPENDIX A-1: IREP INPUT – SCC [REDACTED]

EXPOSURE INFORMATION							
Number of exposures							
260							
Exposure #	Exposure Year	Exposure Rate	Radiation Type	Dose Distribution Type	Parameter 1	Parameter 2	Parameter 3
1	[REDACTED]	acute	photons E=30-250keV	Constant	0.027	0.000	0.000
2	[REDACTED]	acute	photons E=30-250keV	Constant	0.115	0.000	0.000
3	[REDACTED]	acute	electrons E>15keV	Constant	0.081	0.000	0.000
4	[REDACTED]	acute	electrons E>15keV	Constant	0.269	0.000	0.000
5	[REDACTED]	acute	electrons E>15keV	Constant	0.291	0.000	0.000
6	[REDACTED]	acute	electrons E>15keV	Constant	0.044	0.000	0.000
7	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
8	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
9	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
10	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
11	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
12	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
13	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
14	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001	0.000
15	[REDACTED]	acute	photons E=30-250keV	Constant	0.020	0.000	0.000
16	[REDACTED]	acute	electrons E>15keV	Constant	0.020	0.000	0.000
17	[REDACTED]	acute	electrons E>15keV	Constant	0.050	0.000	0.000
18	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.030	1.520	0.000
19	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
20	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
21	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
22	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
23	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
24	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
25	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
26	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
27	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
28	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
29	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
30	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
31	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
32	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
33	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
34	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
35	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
36	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.025	1.520	0.000
37	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
38	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
39	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
40	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
41	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000

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Appendix A-1: IREP Input – SCC [Redacted] (continued)

42	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
43	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
44	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
45	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
46	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
47	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
48	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
49	[redacted]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
50	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
51	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
52	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
53	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
54	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
55	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
56	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
57	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
58	[redacted]	acute	photons E=30-250keV	Normal	0.001	0.000	0.000
59	[redacted]	chronic	photons E=30-250keV	Lognormal	0.073	3.000	0.000
60	[redacted]	chronic	photons E=30-250keV	Lognormal	0.075	3.000	0.000
61	[redacted]	chronic	alpha	Triangular	0.000	0.007	0.014
62	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
63	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.064
64	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.080
65	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.079
66	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.063
67	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
68	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
69	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
70	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
71	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
72	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
73	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
74	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
75	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.041
76	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
77	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
78	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.043
79	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.044
80	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.045
81	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
82	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
83	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.047
84	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
85	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
86	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.049
87	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
88	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050

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Appendix A-1: IREP Input – SCC [Redacted] (continued)

89	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.051
90	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.051
91	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
92	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
93	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
94	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.053
95	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.053
96	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
97	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
98	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
99	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.055
100	[redacted]	chronic	electrons E>15keV	Lognormal	0.018	3.000	0.000
101	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
102	[redacted]	chronic	electrons E>15keV	Lognormal	0.036	3.000	0.000
103	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
104	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
105	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
106	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
107	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
108	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
109	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
110	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
111	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
112	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
113	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
114	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
115	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
116	[redacted]	chronic	electrons E>15keV	Lognormal	0.024	3.000	0.000
117	[redacted]	chronic	electrons E>15keV	Lognormal	0.022	3.000	0.000
118	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
119	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
120	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
121	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
122	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
123	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
124	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
125	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
126	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
127	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
128	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
129	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
130	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
131	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
132	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
133	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
134	[redacted]	chronic	electrons E>15keV	Lognormal	0.011	3.000	0.000
135	[redacted]	chronic	electrons E>15keV	Lognormal	0.004	3.000	0.000

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Appendix A-1: IREP Input – SCC [Redacted] (continued)

136	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
137	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
138	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
139	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
140	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
141	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
142	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
143	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
144	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
145	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
146	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
147	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
148	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
149	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
150	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
151	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
152	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
153	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
154	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
155	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
156	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
157	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
158	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
159	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
160	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
161	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
162	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
163	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
164	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
165	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
166	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
167	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
168	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
169	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
170	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
171	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
172	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
173	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
174	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
175	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
176	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
177	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
178	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
179	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
180	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
181	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
182	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000

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Appendix A-1: IREP Input – SCC [Redacted] (continued)

183	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
184	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
185	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
186	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
187	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
188	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
189	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
190	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
191	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
192	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
193	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
194	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
195	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
196	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
197	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
198	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
199	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
200	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
201	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
202	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
203	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
204	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
205	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
206	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
207	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
208	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
209	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
210	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
211	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
212	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
213	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
214	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
215	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
216	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
217	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
218	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
219	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
220	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
221	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
222	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
223	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
224	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
225	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
226	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
227	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
228	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
229	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000

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Appendix A-1: IREP Input – SCC [Redacted] (continued)

230	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
231	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
232	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
233	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
234	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
235	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
236	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
237	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
238	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
239	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
240	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
241	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
242	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
243	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
244	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
245	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
246	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
247	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
248	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
249	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
250	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
251	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
252	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
253	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
254	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
255	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
256	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
257	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
258	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
259	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
260	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000

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APPENDIX A-2: IREP INPUT – SCC [REDACTED]

EXPOSURE INFORMATION							
Number of exposures							
290							
Exposure #	Exposure Year	Exposure Rate	Radiation Type	Dose Distribution Type	Parameter 1	Parameter 2	Parameter 3
1	[REDACTED]	acute	photons E=30-250keV	Constant	0.027	0.000	0.000
2	[REDACTED]	acute	photons E=30-250keV	Constant	0.115	0.000	0.000
3	[REDACTED]	acute	electrons E>15keV	Constant	0.069	0.000	0.000
4	[REDACTED]	acute	electrons E>15keV	Constant	0.230	0.000	0.000
5	[REDACTED]	acute	electrons E>15keV	Constant	0.249	0.000	0.000
6	[REDACTED]	acute	electrons E>15keV	Constant	0.038	0.000	0.000
7	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
8	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
9	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
10	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
11	[REDACTED]	acute	photons E=30-250keV	Normal	0.270	0.081	0.000
12	[REDACTED]	acute	photons E=30-250keV	Normal	0.270	0.081	0.000
13	[REDACTED]	acute	photons E=30-250keV	Normal	0.270	0.081	0.000
14	[REDACTED]	acute	photons E=30-250keV	Normal	0.014	0.004	0.000
15	[REDACTED]	acute	photons E=30-250keV	Constant	0.020	0.000	0.000
16	[REDACTED]	acute	electrons E>15keV	Constant	0.017	0.000	0.000
17	[REDACTED]	acute	electrons E>15keV	Constant	0.043	0.000	0.000
18	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.030	1.520	0.000
19	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
20	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
21	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
22	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
23	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
24	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
25	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
26	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
27	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
28	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
29	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
30	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
31	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
32	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
33	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
34	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
35	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
36	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.025	1.520	0.000
37	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
38	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
39	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
40	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
41	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000

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Appendix A-2: IREP Input – SCC [Redacted] (continued)

42	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
43	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
44	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
45	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
46	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
47	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
48	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
49	[redacted]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
50	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
51	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
52	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
53	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
54	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
55	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
56	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
57	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
58	[redacted]	acute	photons E=30-250keV	Normal	0.003	0.009	0.000
59	[redacted]	chronic	photons E=30-250keV	Lognormal	0.073	3.000	0.000
60	[redacted]	chronic	photons E=30-250keV	Lognormal	0.075	3.000	0.000
61	[redacted]	chronic	alpha	Triangular	0.000	0.007	0.014
62	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
63	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.064
64	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.080
65	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.079
66	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.063
67	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
68	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
69	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
70	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
71	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
72	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
73	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
74	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
75	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.041
76	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
77	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
78	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.043
79	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.044
80	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.045
81	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
82	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
83	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.047
84	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
85	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
86	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.049
87	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
88	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050

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Appendix A-2: IREP Input – SCC [Redacted] (continued)

89	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.051
90	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.051
91	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
92	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
93	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
94	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.053
95	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.053
96	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
97	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
98	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
99	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.055
100	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.055
101	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
102	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
103	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
104	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
105	[redacted]	chronic	electrons E>15keV	Lognormal	0.018	3.000	0.000
106	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
107	[redacted]	chronic	electrons E>15keV	Lognormal	0.036	3.000	0.000
108	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
109	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
110	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
111	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
112	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
113	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
114	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
115	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
116	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
117	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
118	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
119	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
120	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
121	[redacted]	chronic	electrons E>15keV	Lognormal	0.024	3.000	0.000
122	[redacted]	chronic	electrons E>15keV	Lognormal	0.022	3.000	0.000
123	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
124	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
125	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
126	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
127	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
128	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
129	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
130	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
131	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
132	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
133	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
134	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
135	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000

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Appendix A-2: IREP Input – SCC [Redacted] (continued)

136	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
137	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
138	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
139	[redacted]	chronic	electrons E>15keV	Lognormal	0.011	3.000	0.000
140	[redacted]	chronic	electrons E>15keV	Lognormal	0.004	3.000	0.000
141	[redacted]	chronic	electrons E>15keV	Lognormal	0.002	3.000	0.000
142	[redacted]	chronic	electrons E>15keV	Lognormal	0.001	3.000	0.000
143	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
144	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
145	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
146	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
147	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
148	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
149	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
150	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
151	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
152	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
153	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
154	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
155	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
156	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
157	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
158	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
159	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
160	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
161	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
162	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
163	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
164	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
165	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
166	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
167	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
168	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
169	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
170	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
171	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
172	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
173	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
174	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
175	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
176	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
177	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
178	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
179	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
180	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
181	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
182	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000

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Appendix A-2: IREP Input – SCC [Redacted] (continued)

183	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
184	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
185	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
186	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
187	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
188	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
189	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
190	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
191	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
192	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
193	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
194	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
195	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
196	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
197	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
198	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
199	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
200	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
201	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
202	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
203	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
204	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
205	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
206	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
207	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
208	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
209	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
210	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
211	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
212	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
213	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
214	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
215	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
216	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
217	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
218	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
219	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
220	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
221	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
222	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
223	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
224	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
225	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
226	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
227	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
228	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
229	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000

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Appendix A-2: IREP Input – SCC [Redacted] (continued)

230	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
231	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
232	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
233	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
234	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
235	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
236	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
237	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
238	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
239	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
240	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
241	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
242	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
243	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
244	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
245	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
246	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
247	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
248	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
249	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
250	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
251	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
252	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
253	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
254	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
255	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
256	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
257	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
258	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
259	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
260	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
261	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
262	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
263	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
264	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
265	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
266	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
267	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
268	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
269	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
270	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
271	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
272	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
273	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
274	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
275	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
276	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000

NOTICE: This report has been reviewed for Privacy Act information and has been cleared for distribution. However, this report is pre-decisional and has not been reviewed by the Advisory Board on Radiation and Worker Health for factual accuracy or applicability within the requirements of 42 CFR 82.

Appendix A-2: IREP Input – SCC [Redacted] (continued)

277	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
278	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
279	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
280	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
281	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
282	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
283	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
284	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
285	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
286	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
287	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
288	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
289	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
290	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000

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APPENDICES A-3 AND A-4: IREP INPUT – BCC [REDACTED]

EXPOSURE INFORMATION							
Number of exposures							
302							
Exposure #	Exposure Year	Exposure Rate	Radiation Type	Dose Distribution Type	Parameter 1	Parameter 2	Parameter 3
1	[REDACTED]	acute	photons E=30-250keV	Constant	0.027	0.000	0.000
2	[REDACTED]	acute	photons E=30-250keV	Constant	0.115	0.000	0.000
3	[REDACTED]	acute	electrons E>15keV	Constant	0.081	0.000	0.000
4	[REDACTED]	acute	electrons E>15keV	Constant	0.269	0.000	0.000
5	[REDACTED]	acute	electrons E>15keV	Constant	0.291	0.000	0.000
6	[REDACTED]	acute	electrons E>15keV	Constant	0.044	0.000	0.000
7	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
8	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
9	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
10	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
11	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.008	0.000
12	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.008	0.000
13	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.008	0.000
14	[REDACTED]	acute	photons E=30-250keV	Normal	0.014	0.004	0.000
15	[REDACTED]	acute	photons E=30-250keV	Constant	0.020	0.000	0.000
16	[REDACTED]	acute	electrons E>15keV	Constant	0.020	0.000	0.000
17	[REDACTED]	acute	electrons E>15keV	Constant	0.050	0.000	0.000
18	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.030	1.520	0.000
19	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
20	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
21	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
22	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
23	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
24	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
25	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
26	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
27	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
28	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
29	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
30	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
31	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
32	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
33	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
34	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
35	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
36	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.025	1.520	0.000
37	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
38	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
39	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
40	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
41	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000

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Appendices A-3 and A-4: IREP Input – BCC [REDACTED] (continued)

42	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
43	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
44	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
45	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
46	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
47	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
48	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
49	[redacted]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
50	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
51	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
52	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
53	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
54	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
55	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
56	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
57	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.054	0.000
58	[redacted]	acute	photons E=30-250keV	Normal	0.003	0.009	0.000
59	[redacted]	chronic	photons E=30-250keV	Lognormal	0.073	3.000	0.000
60	[redacted]	chronic	photons E=30-250keV	Lognormal	0.075	3.000	0.000
61	[redacted]	chronic	alpha	Triangular	0.000	0.007	0.014
62	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
63	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.064
64	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.080
65	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.079
66	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.063
67	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
68	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
69	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
70	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
71	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
72	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
73	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
74	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
75	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.041
76	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
77	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
78	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.043
79	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.044
80	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.045
81	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
82	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
83	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.047
84	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
85	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
86	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.049
87	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
88	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050

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Appendices A-3 and A-4: IREP Input – BCC [REDACTED] (continued)

89	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.051
90	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.051
91	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
92	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
93	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
94	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.053
95	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.053
96	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
97	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
98	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
99	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.055
100	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.055
101	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
102	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
103	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
104	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
105	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
106	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.057
107	[redacted]	chronic	electrons E>15keV	Lognormal	0.018	3.000	0.000
108	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
109	[redacted]	chronic	electrons E>15keV	Lognormal	0.036	3.000	0.000
110	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
111	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
112	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
113	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
114	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
115	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
116	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
117	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
118	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
119	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
120	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
121	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
122	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
123	[redacted]	chronic	electrons E>15keV	Lognormal	0.024	3.000	0.000
124	[redacted]	chronic	electrons E>15keV	Lognormal	0.022	3.000	0.000
125	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
126	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
127	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
128	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
129	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
130	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
131	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
132	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
133	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
134	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
135	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000

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Appendices A-3 and A-4: IREP Input – BCC [Redacted] (continued)

136	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
137	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
138	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
139	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
140	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
141	[redacted]	chronic	electrons E>15keV	Lognormal	0.011	3.000	0.000
142	[redacted]	chronic	electrons E>15keV	Lognormal	0.004	3.000	0.000
143	[redacted]	chronic	electrons E>15keV	Lognormal	0.002	3.000	0.000
144	[redacted]	chronic	electrons E>15keV	Lognormal	0.001	3.000	0.000
145	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
146	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
147	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
148	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
149	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
150	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
151	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
152	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
153	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
154	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
155	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
156	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
157	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
158	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
159	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
160	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
161	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
162	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
163	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
164	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
165	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
166	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
167	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
168	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
169	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
170	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
171	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
172	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
173	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
174	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
175	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
176	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
177	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
178	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
179	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
180	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
181	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
182	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000

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Appendices A-3 and A-4: IREP Input – BCC [Redacted] (continued)

183	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
184	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
185	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
186	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
187	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
188	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
189	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
190	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
191	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
192	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
193	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
194	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
195	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
196	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
197	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
198	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
199	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
200	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
201	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
202	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
203	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
204	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
205	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
206	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
207	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
208	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
209	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
210	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
211	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
212	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
213	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
214	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
215	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
216	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
217	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
218	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
219	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
220	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
221	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
222	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
223	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
224	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
225	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
226	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
227	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
228	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
229	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000

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Appendices A-3 and A-4: IREP Input – BCC [Redacted] (continued)

230	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
231	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
232	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
233	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
234	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
235	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
236	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
237	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
238	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
239	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
240	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
241	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
242	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
243	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
244	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
245	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
246	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
247	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
248	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
249	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
250	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
251	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
252	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
253	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
254	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
255	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
256	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
257	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
258	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
259	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
260	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
261	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
262	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
263	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
264	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
265	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
266	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
267	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
268	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
269	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
270	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
271	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
272	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
273	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
274	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
275	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
276	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000

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Appendices A-3 and A-4: IREP Input – BCC [REDACTED] (continued)

277	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
278	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
279	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
280	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
281	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
282	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
283	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
284	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
285	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
286	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
287	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
288	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
289	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
290	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
291	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
292	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
293	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
294	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
295	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
296	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
297	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
298	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
299	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
300	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
301	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
302	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000

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APPENDIX A-5: IREP INPUT – BCC [REDACTED]

EXPOSURE INFORMATION							
Number of exposures							
302							
Exposure #	Exposure Year	Exposure Rate	Radiation Type	Dose Distribution Type	Parameter 1	Parameter 2	Parameter 3
1	[REDACTED]	acute	photons E=30-250keV	Constant	0.027	0.000	0.000
2	[REDACTED]	acute	photons E=30-250keV	Constant	0.115	0.000	0.000
3	[REDACTED]	acute	electrons E>15keV	Constant	0.069	0.000	0.000
4	[REDACTED]	acute	electrons E>15keV	Constant	0.230	0.000	0.000
5	[REDACTED]	acute	electrons E>15keV	Constant	0.249	0.000	0.000
6	[REDACTED]	acute	electrons E>15keV	Constant	0.038	0.000	0.000
7	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
8	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
9	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
10	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
11	[REDACTED]	acute	photons E=30-250keV	Normal	0.270	0.081	0.000
12	[REDACTED]	acute	photons E=30-250keV	Normal	0.270	0.081	0.000
13	[REDACTED]	acute	photons E=30-250keV	Normal	0.270	0.081	0.000
14	[REDACTED]	acute	photons E=30-250keV	Normal	0.135	0.041	0.000
15	[REDACTED]	acute	photons E=30-250keV	Constant	0.020	0.000	0.000
16	[REDACTED]	acute	electrons E>15keV	Constant	0.017	0.000	0.000
17	[REDACTED]	acute	electrons E>15keV	Constant	0.043	0.000	0.000
18	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.030	1.520	0.000
19	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
20	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
21	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
22	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
23	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
24	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
25	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
26	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
27	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
28	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
29	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
30	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
31	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
32	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
33	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
34	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
35	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
36	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.025	1.520	0.000
37	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
38	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
39	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
40	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
41	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
42	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000

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Appendix A-5: IREP Input – BCC [Redacted] (continued)

43	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
44	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
45	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
46	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
47	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
48	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
49	[redacted]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
50	[redacted]	acute	photons E=30-250keV	Normal	0.181	0.054	0.000
51	[redacted]	acute	photons E=30-250keV	Normal	0.181	0.054	0.000
52	[redacted]	acute	photons E=30-250keV	Normal	0.181	0.054	0.000
53	[redacted]	acute	photons E=30-250keV	Normal	0.181	0.054	0.000
54	[redacted]	acute	photons E=30-250keV	Normal	0.181	0.054	0.000
55	[redacted]	acute	photons E=30-250keV	Normal	0.181	0.054	0.000
56	[redacted]	acute	photons E=30-250keV	Normal	0.181	0.054	0.000
57	[redacted]	acute	photons E=30-250keV	Normal	0.181	0.054	0.000
58	[redacted]	acute	photons E=30-250keV	Normal	0.031	0.009	0.000
59	[redacted]	chronic	photons E=30-250keV	Lognormal	0.073	3.000	0.000
60	[redacted]	chronic	photons E=30-250keV	Lognormal	0.075	3.000	0.000
61	[redacted]	chronic	alpha	Triangular	0.000	0.007	0.014
62	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
63	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.064
64	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.080
65	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.079
66	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.063
67	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
68	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
69	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
70	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
71	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
72	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
73	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
74	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
75	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.041
76	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
77	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
78	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.043
79	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.044
80	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.045
81	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
82	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
83	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.047
84	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
85	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
86	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.049
87	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
88	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
89	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.051

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Appendix A-5: IREP Input – BCC [Redacted] (continued)

90	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.051
91	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
92	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
93	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
94	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.053
95	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.053
96	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
97	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
98	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
99	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.055
100	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.055
101	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
102	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
103	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
104	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
105	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
106	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.057
107	[redacted]	chronic	electrons E>15keV	Lognormal	0.018	3.000	0.000
108	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
109	[redacted]	chronic	electrons E>15keV	Lognormal	0.036	3.000	0.000
110	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
111	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
112	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
113	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
114	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
115	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
116	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
117	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
118	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
119	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
120	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
121	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
122	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
123	[redacted]	chronic	electrons E>15keV	Lognormal	0.024	3.000	0.000
124	[redacted]	chronic	electrons E>15keV	Lognormal	0.022	3.000	0.000
125	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
126	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
127	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
128	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
129	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
130	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
131	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
132	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
133	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
134	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
135	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
136	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000

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Appendix A-5: IREP Input – BCC [Redacted] (continued)

137	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
138	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
139	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
140	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
141	[redacted]	chronic	electrons E>15keV	Lognormal	0.011	3.000	0.000
142	[redacted]	chronic	electrons E>15keV	Lognormal	0.004	3.000	0.000
143	[redacted]	chronic	electrons E>15keV	Lognormal	0.002	3.000	0.000
144	[redacted]	chronic	electrons E>15keV	Lognormal	0.001	3.000	0.000
145	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
146	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
147	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
148	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
149	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
150	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
151	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
152	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
153	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
154	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
155	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
156	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
157	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
158	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
159	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
160	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
161	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
162	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
163	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
164	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
165	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
166	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
167	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
168	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
169	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
170	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
171	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
172	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
173	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
174	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
175	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
176	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
177	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
178	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
179	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
180	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
181	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
182	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
183	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000

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Appendix A-5: IREP Input – BCC [Redacted] (continued)

184	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
185	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
186	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
187	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
188	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
189	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
190	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
191	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
192	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
193	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
194	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
195	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
196	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
197	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
198	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
199	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
200	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
201	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
202	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
203	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
204	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
205	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
206	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
207	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
208	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
209	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
210	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
211	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
212	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
213	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
214	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
215	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
216	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
217	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
218	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
219	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
220	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
221	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
222	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
223	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
224	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
225	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
226	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
227	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
228	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
229	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
230	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000

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Appendix A-5: IREP Input – BCC [Redacted] (continued)

231	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
232	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
233	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
234	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
235	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
236	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
237	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
238	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
239	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
240	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
241	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
242	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
243	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
244	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
245	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
246	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
247	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
248	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
249	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
250	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
251	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
252	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
253	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
254	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
255	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
256	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
257	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
258	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
259	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
260	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
261	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
262	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
263	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
264	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
265	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
266	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
267	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
268	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
269	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
270	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
271	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
272	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
273	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
274	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
275	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
276	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
277	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000

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Appendix A-5: IREP Input – BCC [Redacted] (continued)

278	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
279	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
280	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
281	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
282	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
283	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
284	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
285	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
286	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
287	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
288	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
289	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
290	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
291	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
292	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
293	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
294	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
295	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
296	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
297	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
298	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
299	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
300	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
301	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
302	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000

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APPENDIX A-6: IREP INPUT – BCC [REDACTED]

EXPOSURE INFORMATION							
Number of exposures							
308							
Exposure #	Exposure Year	Exposure Rate	Radiation Type	Dose Distribution Type	Parameter 1	Parameter 2	Parameter 3
1	[REDACTED]	acute	photons E=30-250keV	Constant	0.027	0.000	0.000
2	[REDACTED]	acute	photons E=30-250keV	Constant	0.115	0.000	0.000
3	[REDACTED]	acute	electrons E>15keV	Constant	0.069	0.000	0.000
4	[REDACTED]	acute	electrons E>15keV	Constant	0.230	0.000	0.000
5	[REDACTED]	acute	electrons E>15keV	Constant	0.249	0.000	0.000
6	[REDACTED]	acute	electrons E>15keV	Constant	0.038	0.000	0.000
7	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
8	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
9	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
10	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
11	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
12	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
13	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
14	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001	0.000
15	[REDACTED]	acute	photons E=30-250keV	Constant	0.020	0.000	0.000
16	[REDACTED]	acute	electrons E>15keV	Constant	0.017	0.000	0.000
17	[REDACTED]	acute	electrons E>15keV	Constant	0.043	0.000	0.000
18	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.030	1.520	0.000
19	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
20	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
21	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
22	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
23	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
24	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
25	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
26	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
27	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
28	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
29	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
30	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
31	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
32	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
33	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
34	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
35	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
36	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.025	1.520	0.000
37	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
38	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
39	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
40	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
41	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
42	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000

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Appendix A-6: IREP Input – BCC [Redacted] (continued)

43	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
44	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
45	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
46	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
47	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
48	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
49	[redacted]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
50	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.054	0.000
51	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.054	0.000
52	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.054	0.000
53	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.054	0.000
54	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.054	0.000
55	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.054	0.000
56	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.054	0.000
57	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.054	0.000
58	[redacted]	acute	photons E=30-250keV	Normal	0.003	0.009	0.000
59	[redacted]	chronic	photons E=30-250keV	Lognormal	0.073	3.000	0.000
60	[redacted]	chronic	photons E=30-250keV	Lognormal	0.075	3.000	0.000
61	[redacted]	chronic	alpha	Triangular	0.000	0.007	0.014
62	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
63	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.064
64	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.080
65	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.079
66	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.063
67	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
68	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
69	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
70	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
71	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
72	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
73	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
74	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
75	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.041
76	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
77	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
78	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.043
79	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.044
80	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.045
81	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
82	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
83	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.047
84	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
85	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
86	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.049
87	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
88	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
89	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.051

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Appendix A-6: IREP Input – BCC [Redacted] (continued)

90	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.051
91	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
92	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
93	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
94	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.053
95	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.053
96	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
97	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
98	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
99	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.055
100	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.055
101	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
102	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
103	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
104	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
105	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
106	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.057
107	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.057
108	[redacted]	chronic	electrons E>15keV	Lognormal	0.018	3.000	0.000
109	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
110	[redacted]	chronic	electrons E>15keV	Lognormal	0.036	3.000	0.000
111	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
112	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
113	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
114	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
115	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
116	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
117	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
118	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
119	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
120	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
121	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
122	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
123	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
124	[redacted]	chronic	electrons E>15keV	Lognormal	0.024	3.000	0.000
125	[redacted]	chronic	electrons E>15keV	Lognormal	0.022	3.000	0.000
126	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
127	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
128	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
129	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
130	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
131	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
132	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
133	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
134	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
135	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
136	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000

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Appendix A-6: IREP Input – BCC [Redacted] (continued)

137	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
138	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
139	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
140	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
141	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
142	[redacted]	chronic	electrons E>15keV	Lognormal	0.011	3.000	0.000
143	[redacted]	chronic	electrons E>15keV	Lognormal	0.004	3.000	0.000
144	[redacted]	chronic	electrons E>15keV	Lognormal	0.002	3.000	0.000
145	[redacted]	chronic	electrons E>15keV	Lognormal	0.001	3.000	0.000
146	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
147	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
148	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
149	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
150	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
151	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
152	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
153	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
154	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
155	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
156	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
157	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
158	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
159	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
160	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
161	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
162	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
163	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
164	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
165	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
166	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
167	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
168	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
169	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
170	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
171	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
172	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
173	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
174	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
175	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
176	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
177	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
178	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
179	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
180	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
181	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
182	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
183	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000

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Appendix A-6: IREP Input – BCC [Redacted] (continued)

184	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
185	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
186	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
187	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
188	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
189	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
190	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
191	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
192	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
193	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
194	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
195	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
196	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
197	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
198	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
199	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
200	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
201	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
202	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
203	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
204	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
205	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
206	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
207	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
208	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
209	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
210	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
211	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
212	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
213	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
214	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
215	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
216	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
217	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
218	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
219	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
220	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
221	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
222	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
223	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
224	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
225	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
226	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
227	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
228	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
229	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
230	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000

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Appendix A-6: IREP Input – BCC [Redacted] (continued)

231	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
232	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
233	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
234	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
235	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
236	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
237	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
238	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
239	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
240	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
241	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
242	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
243	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
244	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
245	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
246	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
247	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
248	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
249	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
250	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
251	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
252	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
253	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
254	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
255	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
256	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
257	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
258	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
259	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
260	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
261	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
262	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
263	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
264	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
265	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
266	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
267	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
268	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
269	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
270	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
271	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
272	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
273	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
274	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
275	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
276	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
277	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000

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Appendix A-6: IREP Input – BCC [Redacted] (continued)

278	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
279	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
280	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
281	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
282	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
283	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
284	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
285	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
286	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
287	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
288	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
289	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
290	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
291	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
292	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
293	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
294	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
295	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
296	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
297	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
298	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
299	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
300	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
301	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
302	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
303	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
304	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
305	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
306	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
307	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
308	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000

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APPENDIX A-7: IREP INPUT – SCC [REDACTED]

EXPOSURE INFORMATION							
Number of exposures							
308							
<u>Exposure #</u>	<u>Exposure Year</u>	<u>Exposure Rate</u>	<u>Radiation Type</u>	<u>Dose Distribution Type</u>	<u>Parameter 1</u>	<u>Parameter 2</u>	<u>Parameter 3</u>
1	[REDACTED]	acute	photons E=30-250keV	Constant	0.027	0.000	0.000
2	[REDACTED]	acute	photons E=30-250keV	Constant	0.115	0.000	0.000
3	[REDACTED]	acute	electrons E>15keV	Constant	0.081	0.000	0.000
4	[REDACTED]	acute	electrons E>15keV	Constant	0.269	0.000	0.000
5	[REDACTED]	acute	electrons E>15keV	Constant	0.291	0.000	0.000
6	[REDACTED]	acute	electrons E>15keV	Constant	0.044	0.000	0.000
7	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
8	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
9	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
10	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
11	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
12	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
13	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
14	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001	0.000
15	[REDACTED]	acute	photons E=30-250keV	Constant	0.020	0.000	0.000
16	[REDACTED]	acute	electrons E>15keV	Constant	0.020	0.000	0.000
17	[REDACTED]	acute	electrons E>15keV	Constant	0.050	0.000	0.000
18	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.030	1.520	0.000
19	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
20	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
21	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
22	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
23	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
24	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
25	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
26	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
27	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
28	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
29	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
30	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
31	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
32	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
33	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
34	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
35	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
36	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.025	1.520	0.000
37	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
38	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
39	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
40	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
41	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
42	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000

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Appendix A-7: IREP Input – SCC [Redacted] (continued)

43	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
44	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
45	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
46	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
47	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
48	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
49	[redacted]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
50	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
51	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
52	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
53	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
54	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
55	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
56	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
57	[redacted]	acute	photons E=30-250keV	Normal	0.006	0.002	0.000
58	[redacted]	acute	photons E=30-250keV	Normal	0.001	0.000	0.000
59	[redacted]	chronic	photons E=30-250keV	Lognormal	0.073	3.000	0.000
60	[redacted]	chronic	photons E=30-250keV	Lognormal	0.075	3.000	0.000
61	[redacted]	chronic	alpha	Triangular	0.000	0.007	0.014
62	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
63	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.064
64	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.080
65	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.079
66	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.063
67	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
68	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
69	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
70	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
71	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
72	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
73	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
74	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
75	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.041
76	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
77	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
78	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.043
79	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.044
80	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.045
81	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
82	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
83	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.047
84	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
85	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
86	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.049
87	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
88	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
89	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.051

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Appendix A-7: IREP Input – SCC [Redacted] (continued)

90	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.051
91	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
92	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
93	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
94	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.053
95	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.053
96	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
97	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
98	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
99	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.055
100	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.055
101	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
102	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
103	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
104	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
105	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
106	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.057
107	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.057
108	[redacted]	chronic	electrons E>15keV	Lognormal	0.018	3.000	0.000
109	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
110	[redacted]	chronic	electrons E>15keV	Lognormal	0.036	3.000	0.000
111	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
112	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
113	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
114	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
115	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
116	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
117	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
118	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
119	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
120	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
121	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
122	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
123	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
124	[redacted]	chronic	electrons E>15keV	Lognormal	0.024	3.000	0.000
125	[redacted]	chronic	electrons E>15keV	Lognormal	0.022	3.000	0.000
126	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
127	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
128	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
129	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
130	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
131	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
132	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
133	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
134	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
135	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
136	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000

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Appendix A-7: IREP Input – SCC [Redacted] (continued)

137	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
138	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
139	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
140	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
141	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
142	[redacted]	chronic	electrons E>15keV	Lognormal	0.011	3.000	0.000
143	[redacted]	chronic	electrons E>15keV	Lognormal	0.004	3.000	0.000
144	[redacted]	chronic	electrons E>15keV	Lognormal	0.002	3.000	0.000
145	[redacted]	chronic	electrons E>15keV	Lognormal	0.001	3.000	0.000
146	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
147	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
148	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
149	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
150	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
151	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
152	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
153	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
154	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
155	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
156	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
157	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
158	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
159	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
160	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
161	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
162	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
163	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
164	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
165	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
166	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
167	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
168	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
169	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
170	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
171	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
172	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
173	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
174	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
175	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
176	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
177	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
178	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
179	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
180	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
181	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
182	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
183	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000

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Appendix A-7: IREP Input – SCC [Redacted] (continued)

184	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
185	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
186	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
187	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
188	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
189	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
190	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
191	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
192	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
193	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
194	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
195	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
196	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
197	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
198	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
199	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
200	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
201	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
202	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
203	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
204	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
205	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
206	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
207	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
208	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
209	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
210	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
211	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
212	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
213	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
214	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
215	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
216	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
217	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
218	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
219	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
220	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
221	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
222	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
223	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
224	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
225	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
226	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
227	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
228	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
229	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
230	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000

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Appendix A-7: IREP Input – SCC [Redacted] (continued)

231	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
232	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
233	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
234	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
235	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
236	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
237	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
238	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
239	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
240	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
241	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
242	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
243	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
244	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
245	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
246	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
247	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
248	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
249	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
250	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
251	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
252	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
253	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
254	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
255	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
256	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
257	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
258	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
259	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
260	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
261	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
262	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
263	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
264	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
265	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
266	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
267	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
268	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
269	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
270	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
271	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
272	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
273	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
274	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
275	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
276	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
277	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000

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Appendix A-7: IREP Input – SCC [Redacted] (continued)

278	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
279	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
280	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
281	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
282	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
283	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
284	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
285	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
286	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
287	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
288	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
289	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
290	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
291	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
292	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
293	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
294	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
295	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
296	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
297	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
298	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
299	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
300	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
301	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
302	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
303	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
304	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
305	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
306	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
307	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
308	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000

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APPENDIX A-8: IREP INPUT – SCC [REDACTED]

EXPOSURE INFORMATION							
Number of exposures							
314							
Exposure #	Exposure Year	Exposure Rate	Radiation Type	Dose Distribution Type	Parameter 1	Parameter 2	Parameter 3
1	[REDACTED]	acute	photons E=30-250keV	Constant	0.027	0.000	0.000
2	[REDACTED]	acute	photons E=30-250keV	Constant	0.115	0.000	0.000
3	[REDACTED]	acute	electrons E>15keV	Constant	0.081	0.000	0.000
4	[REDACTED]	acute	electrons E>15keV	Constant	0.269	0.000	0.000
5	[REDACTED]	acute	electrons E>15keV	Constant	0.291	0.000	0.000
6	[REDACTED]	acute	electrons E>15keV	Constant	0.044	0.000	0.000
7	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
8	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
9	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
10	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
11	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.008	0.000
12	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.008	0.000
13	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.008	0.000
14	[REDACTED]	acute	photons E=30-250keV	Normal	0.014	0.004	0.000
15	[REDACTED]	acute	photons E=30-250keV	Constant	0.020	0.000	0.000
16	[REDACTED]	acute	electrons E>15keV	Constant	0.020	0.000	0.000
17	[REDACTED]	acute	electrons E>15keV	Constant	0.050	0.000	0.000
18	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.030	1.520	0.000
19	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
20	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
21	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
22	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.060	1.520	0.000
23	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.045	1.520	0.000
24	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
25	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
26	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
27	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
28	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
29	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
30	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
31	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
32	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
33	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
34	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
35	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
36	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.025	1.520	0.000
37	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
38	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
39	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
40	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
41	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
42	[REDACTED]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000

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Appendix A-8: IREP Input – SCC [Redacted] (continued)

43	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
44	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
45	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
46	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
47	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
48	[redacted]	acute	photons E=30-250keV	Lognormal	0.020	1.520	0.000
49	[redacted]	acute	photons E=30-250keV	Lognormal	0.015	1.520	0.000
50	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.002	0.000
51	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.002	0.000
52	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.002	0.000
53	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.002	0.000
54	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.002	0.000
55	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.002	0.000
56	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.002	0.000
57	[redacted]	acute	photons E=30-250keV	Normal	0.018	0.002	0.000
58	[redacted]	acute	photons E=30-250keV	Normal	0.003	0.000	0.000
59	[redacted]	chronic	photons E=30-250keV	Lognormal	0.073	3.000	0.000
60	[redacted]	chronic	photons E=30-250keV	Lognormal	0.075	3.000	0.000
61	[redacted]	chronic	alpha	Triangular	0.000	0.007	0.014
62	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
63	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.064
64	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.080
65	[redacted]	chronic	alpha	Triangular	0.000	0.040	0.079
66	[redacted]	chronic	alpha	Triangular	0.000	0.032	0.063
67	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
68	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
69	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
70	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
71	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
72	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
73	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.039
74	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.040
75	[redacted]	chronic	alpha	Triangular	0.000	0.020	0.041
76	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
77	[redacted]	chronic	alpha	Triangular	0.000	0.021	0.042
78	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.043
79	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.044
80	[redacted]	chronic	alpha	Triangular	0.000	0.022	0.045
81	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
82	[redacted]	chronic	alpha	Triangular	0.000	0.023	0.046
83	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.047
84	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
85	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.048
86	[redacted]	chronic	alpha	Triangular	0.000	0.024	0.049
87	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
88	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.050
89	[redacted]	chronic	alpha	Triangular	0.000	0.025	0.051

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Appendix A-8: IREP Input – SCC [Redacted] (continued)

90	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.051
91	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
92	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
93	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.052
94	[redacted]	chronic	alpha	Triangular	0.000	0.026	0.053
95	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.053
96	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
97	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
98	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.054
99	[redacted]	chronic	alpha	Triangular	0.000	0.027	0.055
100	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.055
101	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
102	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
103	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.056
104	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
105	[redacted]	chronic	alpha	Triangular	0.000	0.028	0.057
106	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.057
107	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.057
108	[redacted]	chronic	alpha	Triangular	0.000	0.029	0.058
109	[redacted]	chronic	electrons E>15keV	Lognormal	0.018	3.000	0.000
110	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
111	[redacted]	chronic	electrons E>15keV	Lognormal	0.036	3.000	0.000
112	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
113	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
114	[redacted]	chronic	electrons E>15keV	Lognormal	0.038	3.000	0.000
115	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
116	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
117	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
118	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
119	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
120	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
121	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
122	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
123	[redacted]	chronic	electrons E>15keV	Lognormal	0.039	3.000	0.000
124	[redacted]	chronic	electrons E>15keV	Lognormal	0.031	3.000	0.000
125	[redacted]	chronic	electrons E>15keV	Lognormal	0.024	3.000	0.000
126	[redacted]	chronic	electrons E>15keV	Lognormal	0.022	3.000	0.000
127	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
128	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
129	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
130	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
131	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
132	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
133	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
134	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
135	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
136	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
137	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000

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Appendix A-8: IREP Input – SCC [Redacted] (continued)

138	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
139	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
140	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
141	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
142	[redacted]	chronic	electrons E>15keV	Lognormal	0.021	3.000	0.000
143	[redacted]	chronic	electrons E>15keV	Lognormal	0.011	3.000	0.000
144	[redacted]	chronic	electrons E>15keV	Lognormal	0.004	3.000	0.000
145	[redacted]	chronic	electrons E>15keV	Lognormal	0.002	3.000	0.000
146	[redacted]	chronic	electrons E>15keV	Lognormal	0.001	3.000	0.000
147	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
148	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
149	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
150	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
151	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
152	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
153	[redacted]	chronic	electrons E>15keV	Lognormal	0.000	3.000	0.000
154	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
155	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
156	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
157	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
158	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
159	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
160	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
161	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
162	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
163	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
164	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
165	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
166	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
167	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
168	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
169	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
170	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
171	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
172	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
173	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
174	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
175	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
176	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
177	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
178	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
179	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
180	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
181	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
182	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
183	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
184	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000

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Appendix A-8: IREP Input – SCC [Redacted] (continued)

185	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
186	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
187	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
188	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
189	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
190	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
191	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
192	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
193	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
194	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
195	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
196	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
197	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
198	[redacted]	chronic	alpha	Lognormal	0.000	3.330	0.000
199	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
200	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
201	[redacted]	chronic	alpha	Lognormal	0.000	3.400	0.000
202	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
203	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
204	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
205	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
206	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
207	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
208	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
209	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
210	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
211	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
212	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
213	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
214	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
215	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
216	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
217	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
218	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
219	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
220	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
221	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
222	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
223	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
224	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
225	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
226	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
227	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
228	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
229	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
230	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
231	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000

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Appendix A-8: IREP Input – SCC [Redacted] (continued)

232	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
233	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
234	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
235	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
236	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
237	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
238	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
239	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
240	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
241	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
242	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
243	[redacted]	chronic	alpha	Lognormal	0.001	3.400	0.000
244	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
245	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
246	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
247	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
248	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
249	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
250	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
251	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
252	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
253	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
254	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
255	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
256	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
257	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
258	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
259	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
260	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
261	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
262	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
263	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
264	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
265	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
266	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
267	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
268	[redacted]	chronic	alpha	Lognormal	0.005	3.000	0.000
269	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
270	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
271	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
272	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
273	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
274	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
275	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
276	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
277	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
278	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000

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Appendix A-8: IREP Input – SCC [Redacted] (continued)

279	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
280	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
281	[redacted]	chronic	alpha	Lognormal	0.006	3.000	0.000
282	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
283	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
284	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
285	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
286	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
287	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
288	[redacted]	chronic	alpha	Lognormal	0.007	3.000	0.000
289	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
290	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
291	[redacted]	chronic	alpha	Lognormal	0.000	3.000	0.000
292	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
293	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
294	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
295	[redacted]	chronic	alpha	Lognormal	0.001	3.000	0.000
296	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
297	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
298	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
299	[redacted]	chronic	alpha	Lognormal	0.002	3.000	0.000
300	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
301	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
302	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
303	[redacted]	chronic	alpha	Lognormal	0.003	3.000	0.000
304	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
305	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
306	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
307	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
308	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
309	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
310	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
311	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
312	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
313	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000
314	[redacted]	chronic	alpha	Lognormal	0.004	3.000	0.000

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SECTION II: DR–METHOD B

II.1 DOSE RECONSTRUCTION OVERVIEW

Section II of this report presents the methodologies and results of our blind DR for Case #[REDACTED] representing an EE that worked at Y-12 and the X-10. The EE contracted eight skin cancers (SCCs and BCCs) of the [REDACTED], [REDACTED], and [REDACTED]. This EE was monitored under an external monitoring program, which included recorded photon, beta, and neutron exposures. The EE was also monitored for internal exposures during employment at Y-12, but was not monitored for internal exposures while at X-10.

Our investigation evaluated recorded and missed dose to external penetrating and non-penetrating radiation based on film badge and thermoluminescent dosimeter (TLD) data, potential neutron exposures, occupational medical dose, missed dose from skin deposition of radioactive dust, and recorded and missed internal dose. The shallow dose calculation, which will be discussed below, takes into consideration attenuation of the beta radiation from clothing. The following table summarizes our estimate of the worker’s skin dose.

Based on these results, DR–Method B derived a POC of 52%.

Table II-1. Assigned External Doses for Case #[REDACTED]

Radiation Type	Appendix II.A-1 Exposure No.	SCC [redact] (rem)	Appendix II.A-2 Exposure No.	SCC [redact] (rem)	Appendix II.A-3 Exposure No.	BCC [redact] (rem)	Appendix A-4 Exposure No.	BCC [redact] (rem)	Appendix II.A-5 Exposure No.	BCC [redact] (rem)	Appendix II.A-6 Exposure No.	SCC [redact] (rem)	Appendix II.A-7 Exposure No.	SCC [redact] (rem)
Recorded photon (Y-12)	1-2	0.142	1-2	0.142	1-2	0.142	1-2	0.142	1-2	0.142	1-2	0.142	1-2	0.142
Recorded shallow (Y-12)	3-6	0.637	3-6	0.545	3-6	0.637	3-6	0.545	3-6	0.637	3-6	0.637	3-6	0.637
Missed photon (Y-12)	7-10	0.165	7-10	0.165	7-10	0.165	7-10	0.165	7-10	0.165	7-10	0.165	7-10	0.165
Missed photon (X-10)	15-48	0.920	15-48	0.920	15-48	0.920	15-48	0.920	15-48	0.920	15-48	0.920	15-48	0.920
Missed neutron (Y-12)	11-14	0.224	11-14	0.224	11-14	0.224	11-14	0.224	11-14	0.224	11-14	0.224	11-14	0.224
Occupational medical (Y-12)	49-52	0.026	49-52	1.080	49-52	0.108	49-52	1.080	49-52	0.108	49-52	0.026	49-52	0.108
Missed dose from skin deposition (Y-12)	53-56	0.280	53-56	0.280	53-56	0.280	53-56	0.280	53-56	0.280	53-56	0.280	53-56	0.280
Internal dose (Y-12)	57-95	0.065	57-100	0.070	57-102	0.073	57-102	0.073	57-103	0.074	57-103	0.074	57-104	0.075
Internal dose Pu (X-10)	96- 131	0.070	101- 141	0.081	103-145	0.083	103-145	0.083	104-147	0.084	104-147	0.084	105-149	0.085
Internal dose Am (X-10)	132-167	0.060	142-182	0.072	146-188	0.075	146-188	0.075	148-191	0.076	148-191	0.076	150-194	0.077
Occupational medical (X-10)	168-201	0.148	183-216	0.433	189-222	0.433	189-222	4.354	192-225	0.148	192-225	0.148	195-228	0.433
Total		2.74		4.01		3.14		7.94		2.86		2.77		3.15

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II.2 RELEVANT BACKGROUND INFORMATION

According to the DOE records, the EE worked as a [REDACTED] at the Y-12 plant from [REDACTED], through [REDACTED]. The EE then worked as a [REDACTED] at the X-10 plant from [REDACTED], through [REDACTED]. The EE was diagnosed with eight SCCs and BCCs between [REDACTED] and [REDACTED], as listed in Table II-2.

Table II-2. Skin Cancers for Case # [REDACTED]

Date of Diagnosis	Skin Cancer Type	Location
[REDACTED]	SCC in situ	[REDACTED]
[REDACTED]	SCC in situ	[REDACTED]
[REDACTED]	BCC	[REDACTED]
[REDACTED]	BCC	[REDACTED]
[REDACTED]	BCC	[REDACTED]
[REDACTED]	BCC	[REDACTED]
[REDACTED]	SCC in situ	[REDACTED]
[REDACTED]	SCC	[REDACTED]

At the present time, there are two Special Exposure Cohorts (SECs) that pertain to the Y-12 site, which cover the years 1943–1957. This claim is not eligible for compensation under those SECs, due to the fact that skin cancers are not included in the cohort, and the EE’s employment period is not within the time period covered by the SEC.

Y-12 Employment

As a [REDACTED] at Y-12, the EE worked predominantly in the [REDACTED] Lab in Building [REDACTED]. In the CATI Report, the EE indicates being exposed to enriched uranium, and sometimes wore a respirator for the [REDACTED]. In the DOE records, the EE describes the work at Y-12:

[REDACTED]. I feel I was exposed to a number of solvents and chemicals. I had a lot of [REDACTED] exposures, toxic.

The DOE records show that the EE was monitored on a quarterly basis for external exposure to gamma, beta, and neutron radiation. The EE was monitored for internal exposure to uranium by means of urinalysis bioassays. The EE was also monitored for U-235 and thorium by means of chest counts.

X-10 Employment

As a [REDACTED] at X-10, the EE worked in the Building [REDACTED] [REDACTED] Division. In the CATI Report, the EE indicates being exposed to thorium and enriched uranium. The EE said coveralls were always worn and lab coats in some labs. The EE also wore a respirator when required. The EE listed work duties and locations by year:

[REDACTED]–[REDACTED]: Building [REDACTED], [REDACTED], [REDACTED], [REDACTED] and [REDACTED]

[REDACTED]–[REDACTED]: Building [REDACTED], [REDACTED]
[REDACTED]–[REDACTED]: Building [REDACTED], [REDACTED], coated U & Th fuel particles
[REDACTED]–[REDACTED]: Building [REDACTED], [REDACTED]

In the DOE records, the EE describes the work duties:

[REDACTED] on [REDACTED], [REDACTED], and [REDACTED] of various materials. I felt I was exposed to chemicals, metals, and solvents. I was breathing fumes. Cleaning solvents.

The DOE records show that the EE was monitored on a quarterly basis for external exposure to gamma and beta radiation. The EE does not appear to have been monitored for neutron exposure. The EE was not monitored for internal exposures during employment at X-10.

II.3 EXTERNAL DOSIMETRY RECORDS

The administrative record for this worker indicates that this EE was monitored on a quarterly exchange schedule for the entire employment period at Y-12. Table II-3 presents the external dosimetry data provided by DOE for this worker.

Table II-3. External Dosimetry Data (mrem) at Y-12 for Case #[REDACTED]

Quarter/year	Shallow	Deep	Neutron
2/[REDACTED]	0	0	0
3/[REDACTED]	22	11	0
4/[REDACTED]	59	0	0
1/[REDACTED]	20	0	0
2/[REDACTED]	23	0	0
3/[REDACTED]	145	27	0
4/[REDACTED]	108	4	0
1/[REDACTED]	74	9	0
2/[REDACTED]	35	0	0
3/[REDACTED]	79	0	0
4/[REDACTED]	103	13	0
1/[REDACTED]	44	11	0
2/[REDACTED]	50	50	0
3/[REDACTED]	65	65	0

Any reading below the LOD/2 value is considered a zero reading. For example, in the last quarter of [REDACTED], the deep dose reading was 4 mrem. Since this is below the LOD/2 value of 15 mrem, the reading is considered a zero reading and 4 mrem is subtracted from the recorded dose for that year.

The DOE records show that the EE was monitored on a quarterly exchange schedule for external beta and gamma radiation for the entire employment at X-10. All of the dosimeter readings were zero.

II.3.1 Reconstruction of External Doses for Y-12 Employment

SC&A thoroughly reviewed the dosimetry records for Case # [REDACTED] and found that the EE was monitored for external photon, beta, and neutron exposures throughout employment. These records, along with the Y-12 Occupational External Dose TBD (ORAUT-TKBS-0014-6) and OCAS-IG-001 (*External Dose Reconstruction Implementation Guideline*) were used to reconstruct the external doses for this case. The DR includes an assessment of recorded and missed photon/beta dose, missed neutron dose, occupational medical dose, and missed dose from skin deposition. Table II-4 is a summary of the assigned doses, and Appendices II.A-1 through II.A-7 present the IREP input values used to determine the POC.

Table II-4. Assigned External Doses for Case # [REDACTED] during Y-12 Employment

Radiation Type	Appendix A-1 Exposure No.	[REDACTED] (rem)	Appendix A-2 Exposure No.	[REDACTED] (rem)	Appendix A-3 Exposure No.	[REDACTED] (rem)
Recorded photon	1–2	0.142	1–2	0.142	1–2	0.142
Recorded shallow	3–6	0.637	3–6	0.545	3–6	0.637
Missed photon	7–10	0.165	7–10	0.165	7–10	0.165
Missed neutron	11–14	0.224	11–14	0.224	11–14	0.224
Missed dose from skin deposition	53–56	0.280	53–56	0.280	53–56	0.280
Occupational medical	49–52	0.026	49–52	1.080	49–52	0.108
Total		1.474		2.436		1.556

Radiation Type	Appendix A-4 Exposure No.	[REDACTED] (rem)	Appendix A-5 Exposure No.	[REDACTED] (rem)	Appendix A-6 Exposure No.	[REDACTED] (rem)	Appendix A-7 Exposure No.	[REDACTED] (rem)
Recorded photon	1–2	0.142	1–2	0.142	1–2	0.142	1–2	0.142
Recorded shallow	3–6	0.545	3–6	0.637	3–6	0.637	3–6	0.637
Missed photon	7–10	0.165	7–10	0.165	7–10	0.165	7–10	0.165
Missed neutron	11–14	0.224	11–14	0.224	11–14	0.224	11–14	0.224
Missed dose from skin deposition	53–56	0.280	53–56	0.280	53–56	0.280	53–56	0.280
Occupational medical	49–52	1.080	49–52	0.108	49–52	0.026	49–52	0.108
Total		2.436		1.556		1.474		1.556

DR–Method B used the guidance in ORAUT-OTIB-0017 to assess doses to the skin. A DCF of 1 is assumed for all skin cancers. Table 6-5 of ORAUT-TKBS-0014-6 recommends the following energy ranges of 100% 30–250 keV photons for deep dose, 100% >15 keV electrons for shallow dose, and 100% 0.1–2 MeV for neutron dose for Building [REDACTED].

Recorded Photon Dose

The EE was monitored on a quarterly basis for external exposure to photons with TLDs. The EE did have some dosimeter readings above the LOD. An example of SC&A’s Method B calculations is given below for the year [REDACTED].

For [REDACTED], the EE had a photon reading of 0.027 rem:

$$\text{Calculated recorded 30–250 keV photon dose to the skin} = 0.027 * 1 = 0.027 \text{ rem}$$

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SC&A calculated 0.142 rem recorded photon dose to the skin, as cited in entries #1–#2 of each appendix. These values are entered as the mean of a normal distribution with a standard deviation of 30%.

Recorded Shallow Dose

The shallow doses listed in the Y-12 dosimetry records represent the doses captured in the open window and, therefore, include both penetrating and non-penetrating dose. The dose from electron exposure is determined by subtracting the deep dose from the recorded shallow dose. Six of the eight skin cancers are located on exposed skin. Beta radiation is attenuated by clothing, so skin that is covered would receive a smaller shallow dose. Two of the skin cancers are located in areas that would be covered by clothing. The guidance on pages 6 and 7 of ORAUT-OTIB-0017 described the method to attenuate shallow dose to skin covered by clothing and lab coats.

All measured and missed non-penetrating doses that are considered electrons should be corrected to account for attenuation by clothing or personal protection equipment (PPE), if applicable. No attenuation should generally be assumed if the skin cancer was diagnosed in an area not normally covered by clothing, such as the face. Information on beta attenuation factors for uranium can be found in the DOE Standard “Guide of Good Practices for Occupational Radiological Protection in Uranium Facilities,” DOE-STD-1136-2000 [DOE 2000] (which is based on the DOE Health Physics Manual of Good Practices for Uranium Facilities, EGG-2530 [DOE 1988]). Examples from this document of transmission factors for uranium through various types of protective clothing include:

- *Lab coat (65% Dacron/35% cotton) – 0.91*
- *Two pairs of coveralls plus paper liner – 0.80*
- *Two pairs of gloves plus liner – 0.60*
- *Face shield – 0.41*

For likely non-compensable cases, an acceptable claimant-favorable approach is to assume 100% transmission (i.e., ignore attenuation). For likely compensable cases, an acceptable minimizing approach is to assume a transmission of 0.6 (unless there is evidence a face shield was used and the skin cancer was on the face, in which case 0.41 would be appropriate). For cases in which a best estimate is applied and the specific type of protective clothing is unknown, a factor of 0.855 for uranium is appropriate (equal to the average of the 0.80 and 0.91 factors listed above). Note that the transmission factors listed are claimant favorable for areas where undergarments (such as a shirt) are worn, because the factors are relevant only to the protective clothing material itself.

We used the best-estimate attenuation factor of 0.855 and applied it to the recorded shallow dose. An example of SC&A’s DR-Method B calculations is given below for the year [redacted].

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For [REDACTED], the EE had a shallow dose reading of 0.265 rem.

Calculated recorded shallow dose to the **exposed** skin = $0.265 * 1 = 0.265$ rem

Calculated recorded shallow dose to the **covered** skin = $0.265 * 1 * 0.855 = 0.227$ rem

This value is entered as the mean of a normal distribution with a standard deviation of 30%.

Missed Photon Dose

Method B assigned missed dose to the skin by multiplying the number of zero readings per year by one-half the LOD. External dosimetry data were reviewed in detail. Each quarterly reading that is below the LOD/2 is considered a zero reading. The guidance in the attachments to ORAUT-OTIB-0017 is used to assess the missed photon dose and missed shallow dose. These procedures are specific for the Savannah River Site, Hanford, and the Gaseous Diffusion Plants, and have been applied here.

For any badge cycle with a zero result in either the OW or S reading, or both, assign a single missed dose as explained in Items 7-9 below.

If only the OW reading was reported as zero, the missed dose assigned should be the appropriate OW LOD for that era (divided by 2, treated as lognormal) and considered electrons (corrected for attenuation, if applicable) or low-energy photons (multiplied by 0.6 in the film badge era, if applicable) consistent with the approach taken in Step 2.

If only the S reading was reported as zero, the missed dose assigned should be the appropriate S LOD for that era (divided by 2, treated as lognormal) and considered 30–250 keV photons.

If both the OW and S readings were reported as zero, the missed dose assigned should be the appropriate OW LOD for that era (divided by 2, treated as lognormal) and considered 30–250 keV photons.

During the film-badge era, for a person potentially exposed to neutrons, assign unmonitored neutron dose based on neutron-gamma ratios per the TBD (using an organ DCF of 1).

During the TLD era, for a person potentially exposed to neutrons, if a zero neutron result was recorded, assign missed dose per the TBD (using an organ DCF of 1).

The LOD of 30 mrem is used for both deep and shallow dose. The EE had positive shallow dose readings (i.e., above the LOD/2 values) for all exchange periods. Therefore, only missed 30–250 keV photon dose was assigned for this case. An example of SC&A's Method B missed photon dose is given for the year [REDACTED].

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$$\begin{aligned} \text{Calculated missed photon dose to the skin} &= \# \text{ of zero readings} * \frac{1}{2} \text{ LOD} * \text{ DCF} \\ &= 3 * 0.015 * 1 = 0.045 \text{ rem} \end{aligned}$$

DR–Method B calculated a total missed photon dose of 0.165 rem to the skin, as cited in entries #7–#10 of each appendix. As per guidance in OCAS-IG-001, these values were entered into the IREP program as the geometric mean (GM) of a lognormal distribution with a GSD of 1.52.

Missed Neutron Dose

The EE did have zero neutron readings during employment; therefore, SC&A’s Method B decided it would be appropriate and claimant favorable to assign missed neutron dose. The guidance in the TBD recommends using neutron-to-photon dose ratios from Table 6-13, along with the number of zero readings, ICRP correction factors, and organ DCFs. The neutron-to-photon dose ratio of 0.7103 is identified as the default value for Y-12. Table 6-11 of the Y-12 TBD cites the claimant-favorable neutron energy range of 0.1–2 MeV for Building [REDACTED].

An example of DR–Method B’s missed dose calculation is provided below for [REDACTED].

For [REDACTED], there are [REDACTED] zero readings for neutrons:

$$\begin{aligned} \text{Missed neutron dose} &= \# \text{ of zeroes} * \text{ LOD}/2 * \text{ n-g ratio} * \text{ ICRP CF} * \text{ DCF} \\ \text{0.1–2 MeV neutron dose} &= 3 \text{ zeros} * 0.015 \text{ rem} * 0.7103 * 1.91 * 1 = 0.061 \text{ rem} \end{aligned}$$

SC&A’s Method B calculated a total of 0.224 rem to the skin for missed neutron dose, as cited in entries #11–#14 of each appendix. These values are entered as a lognormal distribution with a GSD of 1.52.

Skin Exposures Associated Deposition of Uranium Directly on Skin and Clothing

A skin exposure scenario that is of concern at Y-12 is the direct deposition of airborne uranium dust on bare skin and clothing. This exposure scenario is not addressed in the Y-12 site profile, but was discussed in the 1994 document, *Technical Basis for Beta Skin Dose Calculations at the Y-12 Plant* (Thomas and Bogard 1994), and was raised as a generic issue at the May 21 and July 18, 2013, meetings of the Dose Reconstruction Subcommittee. At the May 21 meeting, NIOSH introduced a strategy for reconstructing skin doses from this scenario for the Bridgeport Brass facility, as follows (ABRWH 2013):

An assessment was made to determine the skin dose from routine skin contamination associated with uranium operations. Based on the Technical Basis Document: An Exposure Matrix for Bridgeport Brass: Havens Laboratory and Adrian Plant (ORAUT-TKBS-0030 Rev. 01), the geometric mean of the Table 3-5 individual daily weighted-average air concentration is 250 dpm/m³ with a geometric standard deviation of 2.2. This results in a 95th percentile air concentration of 915 dpm/m³. Assuming a terminal settling velocity of 0.00075 m/s and 8 hours of operations, a constant air concentration of 915 dpm/m³ would result in a surface contamination level of 1.98 dpm/cm². One could assume that the skin of the head, neck, and hands were re-contaminated at the same level of general surfaces every workday (250 workdays) of the year. The

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skin on the head, neck, and hands represent about 14% of the total body skin area. A maximizing skin dose rate of 40 mrem per 10,000 dpm/cm² per hour can be applied to determine the skin dose to the affected area (Technical Basis for Beta Skin Dose Calculations at the Y12 Plant, SRDB 19821) [Thomas and Bogard 1994]. This would result in a dose to the affected skin of about 16 mrem. Per guidance in Interpretation of Dosimetry Data For Assignment of Shallow Dose (ORAUT-OTIB-0017 Rev. 01), the 16 mrem to the affected skin could be converted to the dose to the skin based on the described approach for non-uniform exposures, resulting in a geometric mean annual skin dose of about 2 mrem with a geometric standard deviation of 8. As a note, this is a bounding estimate using a maximizing skin dose rate and contamination levels. A more realistic skin dose rate and the use of the geometric mean air concentration would result in an exposure of less than 1 mrem.

Method B agrees with the basic strategy described by NIOSH, except that substantial skin exposure to beta emitters associated with uranium can also contribute significant exposure through clothing. NIOSH's assumption that only bare skin (representing 14% of total skin in the above example) is subject to contamination/radiation exposure from the deposition of airborne activity is unrealistic. This is particularly true for work environments involving heavy physical activity, worker perspiration, and damp clothing. Thus, any deposition of airborne contaminants on clothing worn by a worker (as well as clothing coming in contact with existing contaminated surfaces in the workplace) must reasonably be assumed to become contaminated, and that, at a minimum, the level of contamination is comparable to that of bare skin.

The Type S uranium intake calculated from the bioassay data was used to derive the uranium dust loading at Y-12. The bioassay data and the calculated intakes are described further in Section II.4. The Type S uranium intake of 4,854 dpm/day was the largest intake calculated from the bioassay data, which translates to a uranium dust loading of 4,045 dpm/m³. This uranium dust loading value can be compared to uranium air monitoring data taken at Y-12 in 1966. The report, *Y-12 Plant Quarterly Health Physics Report – Second Quarter CT 1966* (UCC 1966) states the following:

Operational type air samples designed to detect levels at specific operations indicate eleven locations that exceed an average of 200 d/m/m³. These operations located at the Metal Preparation Division are repetitive, short term operations that are performed under special Health Physics safety precautions, thus minimizing the personnel exposure potential.

SC&A's Method B was not able to locate specific air monitoring data for Building [REDACTED] during [REDACTED]–[REDACTED], but the 1966 Health Physics report does indicate that the average uranium dust did not exceed an average of 200 dpm/m³ for most operations and locations. It is possible that the EE was involved in the metal preparation operations, but the uranium dust loading of 4,045 dpm/m³ calculated from the bioassay data represents a claimant-favorable assumption of the dust loading.

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The annual skin dose associated with the direct deposition of airborne uranium onto skin and clothing is estimated as follows:

$$\begin{aligned} \text{Uranium dust loading for this EE} &= (4,854 \text{ dpm/day}) / (1.2 \text{ m}^3 \text{ per day inhaled}) \\ &= 4,045 \text{ dpm/m}^3 \end{aligned}$$

$$\begin{aligned} \text{Daily Skin Contamination} &= (4,045 \text{ dpm/m}^3)(0.00075 \text{ m/s})(3600 \text{ sec/hr})(8 \text{ hr/day}) \\ &= 87,372 \text{ dpm/m}^2 \text{ after 8 hours of exposure} \end{aligned}$$

$$\begin{aligned} \text{Unit Conversion} &= (87,372 \text{ dpm/m}^2)(\text{m}^2/10,000 \text{ cm}^2) = 8.7372 \text{ dpm/cm}^2 \\ \text{Skin Dose Rate} &= (8.7372 \text{ dpm/cm}^2)(40 \text{ mrem/hr cm}^2/10,000 \text{ dpm})^1 = 0.0349 \text{ mrem/hr} \\ \text{Yearly Skin Dose} &= (0.0349 \text{ mrem/hr})(8 \text{ h/d})(250 \text{ d/yr}) = 69.9 \text{ mrem/yr} \end{aligned}$$

The dose of 69.9 mrem is assigned as >15 keV electrons for each year of employment at Y-12, as cited in entries #53–#56 of the appendices. This annual exposure rate is directly proportional to the assumed average uranium concentration in urine. It is also important to acknowledge that this model assumes all the uranium deposited on skin and clothing during the course of a work day is completely removed at the end of the day after showering, and any uranium on the EE's clothing is removed during daily laundering.

Occupational Medical Dose

Table 3-1 of the Y-12 Occupational Medical Dose TBD (ORAUT-TKBS-0014-3) indicates that all employees received annual PA chest x-rays as part of their employment through 1988. Although the EE did not have any records of x-rays, DR–Method B assumed the EE had an annual PA chest X-ray for each year of employment at Y-12. Table A-3 of ORAUT-TKBS-0014-3 lists the entrance skin dose (ENSD) from PA chest x-rays taken through 1969 to be 0.27 rem. Table A-1 of ORAUT-OTIB-0006 (*Dose Reconstruction from Medical X-ray Procedures*) provides recommendations of how to assign occupational medical dose to the skin based on the location of the cancer. They are described as “Skin dose guidance for chest projections for the poor collimation period through 1970.” Table II-5 lists each cancer and the target organ dose assigned for each location.

¹ SC&A independently checked this DCF and confirmed that it is reasonable.

Table II-5. Dose Assignments to the Skin for X-ray Exams Taken at Y-12

Skin Cancer	Body location from Table A-1 of OTIB-0006	Recommended target organ from Table A-1 of OTIB-0006	Associated exam dose in rem ([REDACTED]) from Table A-3 of ORAUT-TKBS-0014-3
[REDACTED] SCC [REDACTED]	[REDACTED]	[REDACTED]	0.0064
[REDACTED] SCC [REDACTED]	[REDACTED]	[REDACTED]	0.27
[REDACTED] BCC [REDACTED]	[REDACTED]	[REDACTED]	0.027
[REDACTED] BCC [REDACTED]	[REDACTED]	[REDACTED]	0.027
[REDACTED] BCC [REDACTED]	[REDACTED]	[REDACTED]	0.27
[REDACTED] SCC [REDACTED]	[REDACTED]	[REDACTED]	0.0064
[REDACTED] SCC [REDACTED]	[REDACTED]	[REDACTED]	0.0064
[REDACTED] SCC [REDACTED]	[REDACTED]	[REDACTED]	0.027

These values were entered into IREP as acute 30–250 keV photons with a normal distribution and a standard deviation of 30%.

II.3.2 Reconstruction of External Dose for X-10 Employment

Method B’s review of the X-10 dosimetry records for Case # [REDACTED] found that this EE was monitored for external photon and beta exposures throughout employment. These records, along with the X-10 Occupational External Dose TBD (ORAUT-TKBS-0012-6) and OCAS-IG-001, were used to reconstruct the external doses for this case. The DR includes an assessment of missed photon/beta dose and occupational medical dose. The DOE records show that the EE was monitored mostly on a quarterly basis from [REDACTED] through [REDACTED], and did not have any dosimeter readings above the LOD/2. Therefore, only missed dose is assigned for this time period. The EE did not appear to be monitored for neutron exposure and, according to Section 6.3.4.2.2 of ORAUT-TKBS-0012-6, the EE was not at risk for exposure to neutron radiation. Table II-6 is a summary of the assigned doses, and Appendices II.A-1 through II.A-7 present the IREP input values used to determine the POC.

Table II-6. Assigned External Doses for Case # [REDACTED] during X-10 Employment

Radiation Type	Appendix II.A-1 Exposure No.	[REDACTED] (rem)	Appendix II.A-2 Exposure No.	[REDACTED] (rem)	Appendix II.A-3 Exposure No.	[REDACTED] (rem)	Appendix II.A-4 Exposure No.	[REDACTED] (rem)
Missed photon	15–48	0.920	15–48	0.920	15–48	0.920	15–48	0.920
Occupational medical	168–201	0.148	183–216	0.433	189–222	0.433	189–222	4.354
Total		1.068		1.353		1.353		5.274

Radiation Type	Appendix II.A-5 Exposure No.	[REDACTED] (rem)	Appendix II.A-6 Exposure No.	[REDACTED] (rem)	Appendix II.A-7 Exposure No.	[REDACTED] (rem)
Missed photon	15–48	0.920	15–48	0.920	15–48	0.920
Occupational medical	192–225	0.148	192–225	0.148	195–228	0.433
Total		1.068		1.068		1.353

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Missed Photon Dose

Table 6-24 of ORAUT-TKBS-0012-6 indicates that X-10 workers were usually monitored on a quarterly basis from 1956 to the present. Table 6-24 also lists the LOD for the X-10 beta/photon dosimeters. For the years 1956–1974, the LOD was 0.030 rem, and for the years 1975 to the present, the LOD was 0.010 rem. For this case, some of the dosimetry records prior to [redact] are difficult to read. In addition, the external dose readings for [redact] to [redact] are presented as a yearly summary. DR–Method B decided to assume a quarterly dosimeter exchange for each year of employment at X-10. All of the recorded values are zero readings; therefore, only missed photon dose is assigned. An example of Method B’s missed photon dose is given for the year [redact].

$$\begin{aligned} \text{Calculated missed photon dose to the skin} &= \# \text{ of zero readings} * \frac{1}{2} \text{ LOD} * \text{DCF} \\ &= 4 * 0.015 * 1 = 0.060 \text{ rem} \end{aligned}$$

Method B calculated 0.92 rem missed photon dose to the skin, as cited in entries #15–#48 in each of the appendices. As per the procedures in OCAS-IG-001, these values were entered into the IREP program as the GM of a lognormal distribution with a GDS of 1.52.

Occupational Medical Dose

The EE did not have any x-ray records in the case file, but the EE did state in the CATI Report receiving annual x-rays during employment at X-10. DR–Method B assigned occupational medical dose for each year of employment using the values in Table 3-6 of ORAUT-TKBS-0012-3 and the recommendations in Table A-1 of ORAUT-OTIB-0006. Table II-7 lists the assigned target organ and dose for each skin cancer.

Table II-7. Dose Assignments to the Skin for X-ray Exams taken at X-10

Skin Cancer	Body location from Table A-1 of OTIB-0006	Recommended target organ from Table A-1 of OTIB-0006 ([redact]–[redact])	Associated exam dose in rem from Table 3-6 of ORAUT-TKBS-0012-3	Recommended target organ from Table A-1 of OTIB-0006 ([redact]–[redact])	Associated exam dose in rem from Table 3-6 of ORAUT-TKBS-0012-3
[redact] SCC [redact]	[redact]	[redact]	5.98e-3	[redact]	1.36e-3
[redact] SCC [redact]	[redact]	[redact]	0.0181	[redact]	0.0031
[redact] BCC [redact]	[redact]	[redact]	0.0181	[redact]	0.0031
[redact] BCC [redact]	[redact]	[redact]	0.0181	[redact]	0.0031
[redact] BCC [redact]	[redact]	[redact]	0.181	[redact]	0.031
[redact] SCC [redact]	[redact]	[redact]	5.98e-3	[redact]	1.36e-3
[redact] SCC [redact]	[redact]	[redact]	5.98e-3	[redact]	1.36e-3
[redact] SCC [redact]	[redact]	[redact]	0.0181	[redact]	0.0031

These values were entered into IREP as acute 30–250 keV photons with a normal distribution and a standard deviation of 30%.

II.4 INTERNAL DOSIMETRY RECORDS

The EE was only monitored for internal exposure during employment at Y-12. Monitoring for uranium was conducted by means of quarterly urinalysis bioassays and yearly lung counts. The EE's internal monitoring results are summarized in Tables II.8 and II.9 below.

Table II-8. Uranium Bioassay Results (gross alpha) for Case # [REDACTED]

Year	Quarter	dpm/d
[REDACTED]	1	No data
	2	No data
	3	8
	4	13
[REDACTED]	1	18
	2	13
	3	40
	4	18
[REDACTED]	1	10
	2	11
	3	5
	4	5
[REDACTED]	1	7
	2	39
	3	36
	4	No data

Table II-9. Lung Count Measurements for Case # [REDACTED]

Date	Radionuclide	Result
[REDACTED]	Thorium	0 mg
	U-235	25 µg
[REDACTED]	Thorium	0 mg
	U-235	-14 µg
[REDACTED]	Thorium	0 mg
	U-235	40 µg

The DOE records did not contain any internal monitoring records for this EE during employment at X-10.

II.4.1 Reconstruction of Internal Dose at Y-12

SC&A performed the internal dose assessment for this case using the urinalysis bioassay data and the lung count data and compared the results. Since the EE was monitored for U-235 with lung counts, the EE most likely worked with 93% highly enriched uranium. Section 5.4.2.1 of ORAUT-TKBS-0014-5 describes the following regarding internal dose monitoring:

Individuals working in NU or DU areas had results reported as ^{238}U , and workers in enriched areas had results reported as ^{235}U . Assumptions that are favorable to

claimants should be based on conversions of 93% enrichment for ²³⁵U (oralloy VHEU) and natural isotopic abundances for ²³⁸U.

Urinalysis Bioassays for Uranium

The EE was monitored for internal exposure to uranium by quarterly urinalysis bioassays, which measured gross alpha radiation in units of dpm/day. Table A-1 of ORAUT-TKBS-0014-5 lists the gross alpha minimum detectable level (MDL) for bioassays as 26 dpm/day. Several of the bioassay readings were slightly above the MDL. The guidance in ORAUT-OTIB-0060, *Internal Dose Reconstruction*, recommends a chronic intake assumption for positive values that are within a factor of 2 of the MDL. Since all of the positive bioassay readings were within that range, we assigned the calculated intake as a chronic exposure. Table II-9 lists SC&A's DR-Method B assumptions regarding the bioassay analysis. Any measured values that were less than ½ MDL are assumed to be at the ½ MDL value of 13 dpm/day. The exact dates of the quarterly measurements are not known, so we assigned the measurement date as the last calendar day of the quarter. All intakes are assumed to be U-234, since the DCFs for U-234, U-235, and U-238 are nearly identical, except the DCF for U-234 is slightly higher than those for the other isotopes. Hence, to simplify the analysis in a slightly claimant-favorable manner, U-234 is used as a surrogate for the intake of U-235 and U-238.

Table II-10. Urinalysis Bioassay Analysis

Year	Quarter	Assumed measurement date	Gross alpha (dpm/d)	IMBA input value (dpm/d)	IMBA input type
[REDACTED]	1	No data	No data	No data	No data
	2	No data	No data	No data	No data
	3	[REDACTED]	8	13	Real
	4	[REDACTED]	13	13	Real
[REDACTED]	1	[REDACTED]	18	18	Real
	2	[REDACTED]	13	13	Real
	3	[REDACTED]	40	40	Real
	4	[REDACTED]	18	18	Real
[REDACTED]	1	[REDACTED]	10	13	Real
	2	[REDACTED]	11	13	Real
	3	[REDACTED]	5	13	Real
	4	[REDACTED]	5	13	Real
[REDACTED]	1	[REDACTED]	7	13	Real
	2	[REDACTED]	39	39	Real
	3	[REDACTED]	36	36	Real
	4	No data	No data	No data	No data

Chronic intakes and annual doses were calculated for absorption Types F, M, and S and are listed in Table II-10. The Type S intakes and doses were found to be the largest, and they were used in the IREP calculation for determining the POC. The total assigned dose to the skin from internal exposure to uranium ranged from 0.065 to 0.075 rem, depending on the date of diagnosis. In order to simplify the IMBA calculations, the annual internal doses were calculated for the skin cancer diagnosed in [REDACTED]. For the other seven cancers, the [REDACTED] dose was assumed to be the annual internal dose through the date of diagnosis. For example, the [REDACTED] dose is calculated as 1.17E-3 rem. For the cancer diagnosed in [REDACTED], that value is assumed for the

years [redact] through [redact]. This simplification results in a slight overestimate of the internal dose.

Table II-11. Calculated Uranium Intakes and Doses using Bioassay Data

U-234 Absorption Type	Intake dpm/day
Type S	4854
Type M	227.6
Type F	53.3

Lung Counts for Uranium

SC&A also performed internal dose analysis using the EE’s uranium lung count data. All of the lung count measurements are below the MDLs. Table 5-11 of the Y-12 TBD ORAUT-TKBS-0014-5 recommends using the claimant-favorable MDL of U-235 as 130 µg. As a means of comparison, we performed an internal dose assessment using the U-235 lung count measurements, assuming exposures to both U-235 and U-234. The annual doses to the skin for Type M and Type S U-235 intakes were all less than 1 mrem/year, so they were not considered for the DR. The Type F intake and doses are several orders of magnitude larger and were considered unrealistically high and are not consistent with the bioassay results. Page 12 of the Y-12 TBD also notes the following:

. . . for the vast majority of individuals, lung clearance took place in approximate accordance with the ICRP Publication 2 (ICRP 1959) insoluble model, which fits within the current type M framework. . . .

Therefore, SC&A determined that the internal doses calculated from the bioassay data are both claimant favorable and scientifically sound for this case.

II.4.2 Reconstruction of Internal Dose at X-10

The EE was monitored for internal exposures during employment at X-10. Method B decided to assign internal dose using the ORNL internal coworker model presented in ORAUT-OTIB-0034. This model includes intakes from Sr-90, Ru-106, Cs-137, Ce-144, U-234, Pu-239, and Am-241, which represent recommended 50th percentile values as presented below in Table II-11. The IMBA program was used to calculate the doses to the skin from these intakes for absorption types listed in Table II-11, assuming a chronic intake throughout the duration of employment ([redact]–[redact]).

Table II-12. X-10 Internal Dose Coworker Intakes

Radionuclide	Absorption Type	Year	Intake (dpm/d)
Sr-90	Type F	All	15.52
	Type S	[redacted]–[redacted]	795
	Type S	[redacted]–[redacted]	425.5
Ru-106	Type F	All	103.8
Cs-137	Type F	All	34.1
Ce-144	Type F	All	170.5
U-234	Type F	Thru [redacted]	0.413
	Type F	[redacted]–[redacted]	0.0957
	Type M	Thru [redacted]	1.641
	Type M	[redacted]–[redacted]	0.294
Pu-239	Type M	[redacted]–[redacted]	7.35
		[redacted]–[redacted]	1.614
Am-241	Type M	[redacted]–[redacted]	6.673
		[redacted]–[redacted]	2.207

The annual skin dose results for Sr-90, Ru-106, Cs-137, and U-234 were all less than 1 mrem per year and therefore were not included in the IREP POC calculation. Most of the annual skin doses from exposure to Pu-239, Am-241, and Ce-144 were above 1 mrem per year and were included in our DR. In order to simplify the IMBA calculations, the annual internal doses were calculated for the skin cancers diagnosed in [redacted] and [redacted]. For the other six cancers, the [redacted] dose was assumed to be the annual internal dose through the date of diagnosis. Since the annual internal doses after [redacted] are less than 1 mrem/year, this does not have a significant effect on the total dose assignment.

II.5 Calculation of POC

The IREP input values of Appendices II.A-1 through II.A-7 were imported into the IREP program available on the NIOSH Division of Compensation Analysis and Support (DCAS) web site. Since there are multiple primary cancer sites for this case, the multiple cancer site portion of the IREP program was used in order to determine the total POC for this DR. Table II-12 presents the calculated POC for each skin cancer site.

Table II-13. Calculated POC for Skin Cancers for Case # [Redacted]

Skin cancer	POC
[redacted] SCC [redacted]	1.21
[redacted] SCC [redacted]	1.70
[redacted] BCC [redacted]	11.86
[redacted] BCC [redacted]	11.86
[redacted] BCC [redacted]	26.27
[redacted] SCC [redacted]	11.35
[redacted] SCC [redacted]	1.16
[redacted] SCC [redacted]	1.43

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A hand calculation for the POC from the multiple cancers is as follows:

$$(1 - \text{POC}_1) * (1 - \text{POC}_2) * (1 - \text{POC}_3) * (1 - \text{POC}_4) * (1 - \text{POC}_5) * (1 - \text{POC}_6) * (1 - \text{POC}_7) * (1 - \text{POC}_8) = 1 - \text{POC}_{\text{total}}$$

Therefore, for this case:

$$\begin{aligned} (1 - \text{POC}_{\text{total}}) &= 0.48 \\ 1 - 0.48 &= 0.52 \\ \text{POC}_{\text{total}} &= 52\% \end{aligned}$$

The POC is determined to be 52%, which would make this claim eligible for compensation.

II.6 REFERENCES

- ABRWH. 2013. *Transcript from Meeting of the Advisory Board's Subcommittee on Dose Reconstruction Reviews*, available at the NIOSH website: <http://www.cdc.gov/niosh/ocas/pubm2013.html#may>, May 21, 2013.
- DOE 1988. *Health Physics Manual of Good Practices for Uranium Facilities*, EGG-2530, U.S. Department of Energy, Washington, DC. June 1988.
- DOE 2000. *Guide of Good Practices for Occupational Radiological Protection in Uranium Facilities*, DOE-STD-1136-2000, U.S. Department of Energy, Washington, DC. August 2000.
- ICRP 1959. *Permissible Dose for Internal Radiation*, ICRP Publication 2. International Commission on Radiation Protection. Pergamon Press. 1959.
- OCAS-IG-001. 2007. *External Dose Reconstruction Implementation Guideline*, Rev. 3, National Institute for Occupational Safety and Health, Office of Compensation Analysis and Support, Cincinnati, Ohio. November 21, 2007.
- ORAUT-OTIB-0006. 2011. *Dose Reconstruction from Occupationally Medical X-ray Procedures*, Rev. 04, Oak Ridge Associated Universities Team, Cincinnati, Ohio. June 20, 2011.
- ORAUT-OTIB-0017. 2005. *Technical Information Bulletin: Interpretation of Dosimetry Data for Assignment of Shallow Dose*, Rev. 01, Oak Ridge Associated Universities Team, Cincinnati, Ohio. October 11, 2005.
- ORAUT-OTIB-0034. 2011. *Technical Information Bulletin: Internal Dosimetry Coworker Data for X-10*, Rev. 01, Oak Ridge Associated Universities, Cincinnati, Ohio. April 23, 2013.
- ORAUT-OTIB-0060. 2007. *Internal Dose Reconstruction*, Rev. 00, Oak Ridge Associated Universities Team, Cincinnati, Ohio. February 6, 2007.

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ORAUT-TKBS-0012-3. 2007. *Technical Basis Document for the Oak Ridge National Laboratory – Occupational Medical Dose*, Rev. 02, Oak Ridge Associated Universities Team, Cincinnati, Ohio. October 1, 2007.

ORAUT-TKBS-0012-6. 2007. *Technical Basis Document for the Oak Ridge National Laboratory – Occupational External Dose*, Rev. 01, Oak Ridge Associated Universities Team, Cincinnati, Ohio. September 10, 2007.

ORAUT-TKBS-0014-3. 2007. *Y-12 National Security Complex – Occupational Medical Dose*, Rev. 01, Oak Ridge Associated Universities Team, Cincinnati, Ohio. June 18, 2007.

ORAUT-TKBS-0014-5. 2012. *Y-12 National Security Complex – Occupational Internal Dose*, Rev. 03, Oak Ridge Associated Universities Team, Cincinnati, Ohio. March 12, 2012.

ORAUT-TKBS-0014-6. 2009. *Y-12 National Security Complex – Occupational External Dose*, Rev. 02, Oak Ridge Associated Universities Team, Cincinnati, Ohio. December 18, 2009.

ORAUT-TKBS-0030. 2013. *Technical Basis Document: An Exposure Matrix for Bridgeport Brass: Havens Laboratory and Adrian Plant*, Rev. 01, Oak Ridge Associated Universities Team, Cincinnati, Ohio. August 9, 2013.

Thomas, J.M., and R.S. Bogard, 1994. *Technical Basis for Beta Skin Dose Calculations at the Y-12 Plant*, Oak Ridge Y-12 Plant, Oak Ridge, Tennessee. March 1994. (SRDB 19821)

UCC 1966. *Y-12 Plant Quarterly Health Physics Report – Second Quarter CT 1966*, Report Number Y-KB-73, Union Carbide Corporation Nuclear Division, Y-12 Radiation Safety Department, Oak Ridge, Tennessee. August 10, 1966. (SRDB 082902)

APPENDIX II.A-1: IREP INPUT – [REDACTED] SCC [REDACTED]

<u>Exposure #</u>	<u>Exposure Year</u>	<u>Exposure Rate</u>	<u>Radiation Type</u>	<u>Dose Distribution Type</u>	<u>Parameter 1</u>	<u>Parameter 2</u>
1	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.008
2	[REDACTED]	acute	photons E=30-250keV	normal	0.115	0.035
3	[REDACTED]	acute	electrons E>15keV	normal	0.070	0.021
4	[REDACTED]	acute	electrons E>15keV	normal	0.265	0.080
5	[REDACTED]	acute	electrons E>15keV	normal	0.269	0.081
6	[REDACTED]	acute	electrons E>15keV	normal	0.033	0.010
7	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
8	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
9	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
10	[REDACTED]	acute	photons E=30-250keV	lognormal	0.015	1.52
11	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
12	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
13	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.081	1.52
14	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.020	1.52
15	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
16	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
17	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
18	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
19	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
20	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
21	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
22	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
23	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
24	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
25	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
26	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
27	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
28	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
29	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
30	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
31	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
32	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
33	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
34	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
35	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
36	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
37	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
38	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
39	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
40	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
41	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
42	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
43	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
44	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
45	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
46	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
47	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
48	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
49	[REDACTED]	acute	photons E=30-250keV	normal	0.0064	0.00192
50	[REDACTED]	acute	photons E=30-250keV	normal	0.0064	0.00192
51	[REDACTED]	acute	photons E=30-250keV	normal	0.0064	0.00192
52	[REDACTED]	acute	photons E=30-250keV	Normal	0.0064	0.00192
53	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
54	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02

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Appendix II.A-1: IREP Input – [REDACTED] SCC [REDACTED] (continued)

55	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
56	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
57	[REDACTED]	chronic	alpha	Lognormal	1.68E-04	3.00E+00
58	[REDACTED]	chronic	alpha	Lognormal	6.09E-04	3.00E+00
59	[REDACTED]	chronic	alpha	Lognormal	1.02E-03	3.00E+00
60	[REDACTED]	chronic	alpha	Lognormal	1.41E-03	3.00E+00
61	[REDACTED]	chronic	alpha	Lognormal	1.44E-03	3.00E+00
62	[REDACTED]	chronic	alpha	Lognormal	1.51E-03	3.00E+00
63	[REDACTED]	chronic	alpha	Lognormal	1.57E-03	3.00E+00
64	[REDACTED]	chronic	alpha	Lognormal	1.61E-03	3.00E+00
65	[REDACTED]	chronic	alpha	Lognormal	1.65E-03	3.00E+00
66	[REDACTED]	chronic	alpha	Lognormal	1.68E-03	3.00E+00
67	[REDACTED]	chronic	alpha	Lognormal	1.71E-03	3.00E+00
68	[REDACTED]	chronic	alpha	Lognormal	1.73E-03	3.00E+00
69	[REDACTED]	chronic	alpha	Lognormal	1.75E-03	3.00E+00
70	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.00E+00
71	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.00E+00
72	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00
73	[REDACTED]	chronic	alpha	Lognormal	1.80E-03	3.00E+00
74	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
75	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
76	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
77	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
78	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
79	[REDACTED]	chronic	alpha	Lognormal	1.85E-03	3.00E+00
80	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
81	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
82	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
83	[REDACTED]	chronic	alpha	Lognormal	1.85E-03	3.00E+00
84	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
85	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
86	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
87	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
88	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
89	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
90	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
91	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
92	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
93	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
94	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
95	[REDACTED]	chronic	alpha	Lognormal	1.17E-03	3.00E+00
96	[REDACTED]	chronic	alpha	Lognormal	7.88E-06	3.00E+00
97	[REDACTED]	chronic	alpha	Lognormal	1.96E-04	3.00E+00
98	[REDACTED]	chronic	alpha	Lognormal	4.65E-04	3.00E+00
99	[REDACTED]	chronic	alpha	Lognormal	7.08E-04	3.00E+00
100	[REDACTED]	chronic	alpha	Lognormal	9.18E-04	3.00E+00
101	[REDACTED]	chronic	alpha	Lognormal	1.11E-03	3.00E+00
102	[REDACTED]	chronic	alpha	Lognormal	1.29E-03	3.00E+00
103	[REDACTED]	chronic	alpha	Lognormal	1.45E-03	3.00E+00
104	[REDACTED]	chronic	alpha	Lognormal	1.61E-03	3.00E+00
105	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.00E+00
106	[REDACTED]	chronic	alpha	Lognormal	1.91E-03	3.00E+00
107	[REDACTED]	chronic	alpha	Lognormal	2.06E-03	3.00E+00
108	[REDACTED]	chronic	alpha	Lognormal	2.20E-03	3.00E+00
109	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.00E+00
110	[REDACTED]	chronic	alpha	Lognormal	2.48E-03	3.00E+00
111	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.00E+00

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Appendix II.A-1: IREP Input – [REDACTED] SCC [REDACTED] (continued)

112	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.00E+00
113	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.00E+00
114	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.00E+00
115	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.00E+00
116	[REDACTED]	chronic	alpha	Lognormal	2.42E-03	3.00E+00
117	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.00E+00
118	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.00E+00
119	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.00E+00
120	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.00E+00
121	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.00E+00
122	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.00E+00
123	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.00E+00
124	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.00E+00
125	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.00E+00
126	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.00E+00
127	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.00E+00
128	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.00E+00
129	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.00E+00
130	[REDACTED]	chronic	alpha	Lognormal	2.35E-03	3.00E+00
131	[REDACTED]	chronic	alpha	Lognormal	1.53E-03	3.00E+00
132	[REDACTED]	chronic	alpha	Lognormal	3.47E-06	3.00E+00
133	[REDACTED]	chronic	alpha	Lognormal	6.82E-05	3.00E+00
134	[REDACTED]	chronic	alpha	Lognormal	1.51E-04	3.00E+00
135	[REDACTED]	chronic	alpha	Lognormal	2.43E-04	3.00E+00
136	[REDACTED]	chronic	alpha	Lognormal	3.42E-04	3.00E+00
137	[REDACTED]	chronic	alpha	Lognormal	4.49E-04	3.00E+00
138	[REDACTED]	chronic	alpha	Lognormal	5.63E-04	3.00E+00
139	[REDACTED]	chronic	alpha	Lognormal	6.85E-04	3.00E+00
140	[REDACTED]	chronic	alpha	Lognormal	8.08E-04	3.00E+00
141	[REDACTED]	chronic	alpha	Lognormal	9.36E-04	3.00E+00
142	[REDACTED]	chronic	alpha	Lognormal	1.07E-03	3.00E+00
143	[REDACTED]	chronic	alpha	Lognormal	1.21E-03	3.00E+00
144	[REDACTED]	chronic	alpha	Lognormal	1.35E-03	3.00E+00
145	[REDACTED]	chronic	alpha	Lognormal	1.49E-03	3.00E+00
146	[REDACTED]	chronic	alpha	Lognormal	1.63E-03	3.00E+00
147	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.00E+00
148	[REDACTED]	chronic	alpha	Lognormal	1.90E-03	3.00E+00
149	[REDACTED]	chronic	alpha	Lognormal	1.99E-03	3.00E+00
150	[REDACTED]	chronic	alpha	Lognormal	2.08E-03	3.00E+00
151	[REDACTED]	chronic	alpha	Lognormal	2.16E-03	3.00E+00
152	[REDACTED]	chronic	alpha	Lognormal	2.22E-03	3.00E+00
153	[REDACTED]	chronic	alpha	Lognormal	2.27E-03	3.00E+00
154	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.00E+00
155	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.00E+00
156	[REDACTED]	chronic	alpha	Lognormal	2.40E-03	3.00E+00
157	[REDACTED]	chronic	alpha	Lognormal	2.43E-03	3.00E+00
158	[REDACTED]	chronic	alpha	Lognormal	2.46E-03	3.00E+00
159	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.00E+00
160	[REDACTED]	chronic	alpha	Lognormal	2.52E-03	3.00E+00
161	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.00E+00
162	[REDACTED]	chronic	alpha	Lognormal	2.57E-03	3.00E+00
163	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.00E+00
164	[REDACTED]	chronic	alpha	Lognormal	2.61E-03	3.00E+00
165	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.00E+00
166	[REDACTED]	chronic	alpha	Lognormal	2.64E-03	3.00E+00
167	[REDACTED]	chronic	alpha	Lognormal	1.72E-03	3.00E+00
168	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002

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Appendix II.A-1: IREP Input – [REDACTED] SCC [REDACTED] (continued)

169	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
170	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
171	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
172	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
173	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
174	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
175	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
176	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
177	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
178	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
179	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
180	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
181	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
182	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
183	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
184	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
185	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
186	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
187	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
188	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
189	[REDACTED]	acute	photons E=30-250keV	Normal	0.006	0.002
190	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
191	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
192	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
193	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
194	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
195	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
196	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
197	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
198	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
199	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
200	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
201	[REDACTED]	acute	photons E=30-250keV	Normal	0.001	0.000
202	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.08E-04	3.000
203	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.18E-03	3.000
204	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.35E-03	3.000
205	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
206	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
207	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
208	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
209	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
210	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
211	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
212	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
213	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
214	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
215	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
216	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
217	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
218	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
219	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
220	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
221	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
222	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
223	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
224	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
225	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000

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Appendix II.A-1: IREP Input – [REDACTED] SCC [REDACTED] (continued)

226	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
227	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
228	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
229	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
230	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
231	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
232	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
233	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
234	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
235	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.31E-03	3.000
236	[REDACTED]	chronic	electrons E>15keV	Lognormal	2.43E-04	3.000
237	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000

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APPENDIX II.A-2: IREP INPUT – [REDACTED] SCC [REDACTED]

<u>Exposure #</u>	<u>Exposure Year</u>	<u>Exposure Rate</u>	<u>Radiation Type</u>	<u>Dose Distribution Type</u>	<u>Parameter 1</u>	<u>Parameter 2</u>
1	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.008
2	[REDACTED]	acute	photons E=30-250keV	normal	0.115	0.035
3	[REDACTED]	acute	electrons E>15keV	normal	0.060	0.018
4	[REDACTED]	acute	electrons E>15keV	normal	0.227	0.068
5	[REDACTED]	acute	electrons E>15keV	normal	0.230	0.069
6	[REDACTED]	acute	electrons E>15keV	normal	0.028	0.008
7	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
8	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
9	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
10	[REDACTED]	acute	photons E=30-250keV	lognormal	0.015	1.52
11	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
12	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
13	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.081	1.52
14	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.020	1.52
15	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
16	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
17	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
18	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
19	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
20	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
21	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
22	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
23	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
24	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
25	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
26	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
27	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
28	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
29	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
30	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
31	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
32	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
33	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
34	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
35	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
36	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
37	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
38	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
39	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
40	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
41	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
42	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
43	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
44	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
45	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
46	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
47	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52

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Appendix II.A-2: IREP Input – [REDACTED] SCC [REDACTED] (continued)

48	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
49	[REDACTED]	acute	photons E=30-250keV	normal	0.27	0.081
50	[REDACTED]	acute	photons E=30-250keV	normal	0.27	0.081
51	[REDACTED]	acute	photons E=30-250keV	normal	0.27	0.081
52	[REDACTED]	acute	photons E=30-250keV	Normal	0.27	0.081
53	[REDACTED]	acute	electrons E>15keV	normal	6.99E-02	2.10E-02
54	[REDACTED]	acute	electrons E>15keV	normal	6.99E-02	2.10E-02
55	[REDACTED]	acute	electrons E>15keV	normal	6.99E-02	2.10E-02
56	[REDACTED]	acute	electrons E>15keV	normal	6.99E-02	2.10E-02
57	[REDACTED]	chronic	alpha	Lognormal	1.68E-04	3.00E+00
58	[REDACTED]	chronic	alpha	Lognormal	6.09E-04	3.00E+00
59	[REDACTED]	chronic	alpha	Lognormal	1.02E-03	3.00E+00
60	[REDACTED]	chronic	alpha	Lognormal	1.41E-03	3.00E+00
61	[REDACTED]	chronic	alpha	Lognormal	1.44E-03	3.00E+00
62	[REDACTED]	chronic	alpha	Lognormal	1.51E-03	3.00E+00
63	[REDACTED]	chronic	alpha	Lognormal	1.57E-03	3.00E+00
64	[REDACTED]	chronic	alpha	Lognormal	1.61E-03	3.00E+00
65	[REDACTED]	chronic	alpha	Lognormal	1.65E-03	3.00E+00
66	[REDACTED]	chronic	alpha	Lognormal	1.68E-03	3.00E+00
67	[REDACTED]	chronic	alpha	Lognormal	1.71E-03	3.00E+00
68	[REDACTED]	chronic	alpha	Lognormal	1.73E-03	3.00E+00
69	[REDACTED]	chronic	alpha	Lognormal	1.75E-03	3.00E+00
70	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.00E+00
71	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.00E+00
72	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00
73	[REDACTED]	chronic	alpha	Lognormal	1.80E-03	3.00E+00
74	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
75	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
76	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
77	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
78	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
79	[REDACTED]	chronic	alpha	Lognormal	1.85E-03	3.00E+00
80	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
81	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
82	[REDACTED]	chronic	alpha	Lognormal	1.85E-03	3.00E+00
83	[REDACTED]	chronic	alpha	Lognormal	1.85E-03	3.00E+00
84	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
85	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
86	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
87	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
88	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
89	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
90	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
91	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
92	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
93	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
94	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
95	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
96	[REDACTED]	chronic	alpha	Lognormal	1.80E-03	3.00E+00
97	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00

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Appendix II.A-2: IREP Input – [REDACTED] SCC [REDACTED] (continued)

98	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00
99	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.00E+00
100	[REDACTED]	chronic	alpha	Lognormal	6.71E-04	3.00E+00
101	[REDACTED]	chronic	alpha	Lognormal	7.88E-06	3.000
102	[REDACTED]	chronic	alpha	Lognormal	1.96E-04	3.000
103	[REDACTED]	chronic	alpha	Lognormal	4.65E-04	3.000
104	[REDACTED]	chronic	alpha	Lognormal	7.08E-04	3.000
105	[REDACTED]	chronic	alpha	Lognormal	9.18E-04	3.000
106	[REDACTED]	chronic	alpha	Lognormal	1.11E-03	3.000
107	[REDACTED]	chronic	alpha	Lognormal	1.29E-03	3.000
108	[REDACTED]	chronic	alpha	Lognormal	1.45E-03	3.000
109	[REDACTED]	chronic	alpha	Lognormal	1.61E-03	3.000
110	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.000
111	[REDACTED]	chronic	alpha	Lognormal	1.91E-03	3.000
112	[REDACTED]	chronic	alpha	Lognormal	2.06E-03	3.000
113	[REDACTED]	chronic	alpha	Lognormal	2.20E-03	3.000
114	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
115	[REDACTED]	chronic	alpha	Lognormal	2.48E-03	3.000
116	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
117	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
118	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
119	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
120	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
121	[REDACTED]	chronic	alpha	Lognormal	2.42E-03	3.000
122	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
123	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
124	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
125	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
126	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
127	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
128	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
129	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
130	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
131	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
132	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
133	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
134	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
135	[REDACTED]	chronic	alpha	Lognormal	2.35E-03	3.000
136	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
137	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
138	[REDACTED]	chronic	alpha	Lognormal	2.38E-03	3.000
139	[REDACTED]	chronic	alpha	Lognormal	2.39E-03	3.000
140	[REDACTED]	chronic	alpha	Lognormal	2.41E-03	3.000
141	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
142	[REDACTED]	chronic	alpha	Lognormal	3.47E-06	3.000
143	[REDACTED]	chronic	alpha	Lognormal	6.82E-05	3.000
144	[REDACTED]	chronic	alpha	Lognormal	1.51E-04	3.000
145	[REDACTED]	chronic	alpha	Lognormal	2.43E-04	3.000
146	[REDACTED]	chronic	alpha	Lognormal	3.42E-04	3.000
147	[REDACTED]	chronic	alpha	Lognormal	4.49E-04	3.000

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Appendix II.A-2: IREP Input – [REDACTED] SCC [REDACTED] (continued)

148	[REDACTED]	chronic	alpha	Lognormal	5.63E-04	3.000
149	[REDACTED]	chronic	alpha	Lognormal	6.85E-04	3.000
150	[REDACTED]	chronic	alpha	Lognormal	8.08E-04	3.000
151	[REDACTED]	chronic	alpha	Lognormal	9.36E-04	3.000
152	[REDACTED]	chronic	alpha	Lognormal	1.07E-03	3.000
153	[REDACTED]	chronic	alpha	Lognormal	1.21E-03	3.000
154	[REDACTED]	chronic	alpha	Lognormal	1.35E-03	3.000
155	[REDACTED]	chronic	alpha	Lognormal	1.49E-03	3.000
156	[REDACTED]	chronic	alpha	Lognormal	1.63E-03	3.000
157	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.000
158	[REDACTED]	chronic	alpha	Lognormal	1.90E-03	3.000
159	[REDACTED]	chronic	alpha	Lognormal	1.99E-03	3.000
160	[REDACTED]	chronic	alpha	Lognormal	2.08E-03	3.000
161	[REDACTED]	chronic	alpha	Lognormal	2.16E-03	3.000
162	[REDACTED]	chronic	alpha	Lognormal	2.22E-03	3.000
163	[REDACTED]	chronic	alpha	Lognormal	2.27E-03	3.000
164	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
165	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
166	[REDACTED]	chronic	alpha	Lognormal	2.40E-03	3.000
167	[REDACTED]	chronic	alpha	Lognormal	2.43E-03	3.000
168	[REDACTED]	chronic	alpha	Lognormal	2.46E-03	3.000
169	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
170	[REDACTED]	chronic	alpha	Lognormal	2.52E-03	3.000
171	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
172	[REDACTED]	chronic	alpha	Lognormal	2.57E-03	3.000
173	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
174	[REDACTED]	chronic	alpha	Lognormal	2.61E-03	3.000
175	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
176	[REDACTED]	chronic	alpha	Lognormal	2.64E-03	3.000
177	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
178	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
179	[REDACTED]	chronic	alpha	Lognormal	2.69E-03	3.000
180	[REDACTED]	chronic	alpha	Lognormal	2.70E-03	3.000
181	[REDACTED]	chronic	alpha	Lognormal	2.72E-03	3.000
182	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
183	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
184	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
185	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
186	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
187	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
188	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
189	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
190	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
191	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
192	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
193	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
194	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
195	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
196	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
197	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005

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Appendix II.A-2: IREP Input – [REDACTED] SCC [REDACTED] (continued)

198	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
199	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
200	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
201	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
202	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
203	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
204	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
205	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
206	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
207	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
208	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
209	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
210	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
211	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
212	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
213	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
214	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
215	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
216	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
217	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.08E-04	3.000
218	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.18E-03	3.000
219	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.35E-03	3.000
220	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
221	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
222	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
223	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
224	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
225	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
226	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
227	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
228	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
229	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
230	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
231	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
232	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
233	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
234	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
235	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
236	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
237	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
238	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
239	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
240	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
241	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
242	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
243	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
244	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
245	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
246	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
247	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000

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Appendix II.A-2: IREP Input – [REDACTED] SCC [REDACTED] (continued)

248	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
249	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
250	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.31E-03	3.000
251	[REDACTED]	chronic	electrons E>15keV	Lognormal	2.43E-04	3.000
252	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
253	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
254	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
255	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
256	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
257	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000

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APPENDIX II.A-3: IREP INPUT – [REDACTED] BCC [REDACTED]

<u>Exposure #</u>	<u>Exposure Year</u>	<u>Exposure Rate</u>	<u>Radiation Type</u>	<u>Dose Distribution Type</u>	<u>Parameter 1</u>	<u>Parameter 2</u>
1	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.008
2	[REDACTED]	acute	photons E=30-250keV	normal	0.115	0.035
3	[REDACTED]	acute	electrons E>15keV	normal	0.070	0.021
4	[REDACTED]	acute	electrons E>15keV	normal	0.265	0.080
5	[REDACTED]	acute	electrons E>15keV	normal	0.269	0.081
6	[REDACTED]	acute	electrons E>15keV	normal	0.033	0.010
7	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
8	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
9	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
10	[REDACTED]	acute	photons E=30-250keV	lognormal	0.015	1.52
11	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
12	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
13	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.081	1.52
14	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.020	1.52
15	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
16	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
17	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
18	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
19	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
20	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
21	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
22	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
23	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
24	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
25	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
26	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
27	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
28	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
29	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
30	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
31	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
32	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
33	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
34	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
35	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
36	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
37	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
38	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
39	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
40	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
41	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
42	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
43	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
44	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
45	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
46	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
47	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
48	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
49	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
50	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
51	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
52	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.0081
53	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
54	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02

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Appendix II.A-3: IREP Input – [REDACTED] BCC [REDACTED] (continued)

55	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
56	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
57	[REDACTED]	chronic	alpha	Lognormal	1.68E-04	3.00E+00
58	[REDACTED]	chronic	alpha	Lognormal	6.09E-04	3.00E+00
59	[REDACTED]	chronic	alpha	Lognormal	1.02E-03	3.00E+00
60	[REDACTED]	chronic	alpha	Lognormal	1.41E-03	3.00E+00
61	[REDACTED]	chronic	alpha	Lognormal	1.44E-03	3.00E+00
62	[REDACTED]	chronic	alpha	Lognormal	1.51E-03	3.00E+00
63	[REDACTED]	chronic	alpha	Lognormal	1.57E-03	3.00E+00
64	[REDACTED]	chronic	alpha	Lognormal	1.61E-03	3.00E+00
65	[REDACTED]	chronic	alpha	Lognormal	1.65E-03	3.00E+00
66	[REDACTED]	chronic	alpha	Lognormal	1.68E-03	3.00E+00
67	[REDACTED]	chronic	alpha	Lognormal	1.71E-03	3.00E+00
68	[REDACTED]	chronic	alpha	Lognormal	1.73E-03	3.00E+00
69	[REDACTED]	chronic	alpha	Lognormal	1.75E-03	3.00E+00
70	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.00E+00
71	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.00E+00
72	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00
73	[REDACTED]	chronic	alpha	Lognormal	1.80E-03	3.00E+00
74	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
75	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
76	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
77	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
78	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
79	[REDACTED]	chronic	alpha	Lognormal	1.85E-03	3.00E+00
80	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
81	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
82	[REDACTED]	chronic	alpha	Lognormal	1.85E-03	3.00E+00
83	[REDACTED]	chronic	alpha	Lognormal	1.85E-03	3.00E+00
84	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
85	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
86	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
87	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
88	[REDACTED]	chronic	alpha	Lognormal	1.84E-03	3.00E+00
89	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
90	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
91	[REDACTED]	chronic	alpha	Lognormal	1.83E-03	3.00E+00
92	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
93	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
94	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
95	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
96	[REDACTED]	chronic	alpha	Lognormal	1.80E-03	3.00E+00
97	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00
98	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00
99	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.00E+00
100	[REDACTED]	chronic	alpha	Lognormal	1.77E-03	3.00E+00
101	[REDACTED]	chronic	alpha	Lognormal	1.77E-03	3.00E+00
102	[REDACTED]	chronic	alpha	Lognormal	5.50E-04	3.00E+00
103	[REDACTED]	chronic	alpha	Lognormal	7.88E-06	3.00
104	[REDACTED]	chronic	alpha	Lognormal	1.96E-04	3.00
105	[REDACTED]	chronic	alpha	Lognormal	4.65E-04	3.00
106	[REDACTED]	chronic	alpha	Lognormal	7.08E-04	3.00
107	[REDACTED]	chronic	alpha	Lognormal	9.18E-04	3.00
108	[REDACTED]	chronic	alpha	Lognormal	1.11E-03	3.00
109	[REDACTED]	chronic	alpha	Lognormal	1.29E-03	3.00
110	[REDACTED]	chronic	alpha	Lognormal	1.45E-03	3.00
111	[REDACTED]	chronic	alpha	Lognormal	1.61E-03	3.00

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Appendix II.A-3: IREP Input – [REDACTED] BCC [REDACTED] (continued)

112	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.000
113	[REDACTED]	chronic	alpha	Lognormal	1.91E-03	3.000
114	[REDACTED]	chronic	alpha	Lognormal	2.06E-03	3.000
115	[REDACTED]	chronic	alpha	Lognormal	2.20E-03	3.000
116	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
117	[REDACTED]	chronic	alpha	Lognormal	2.48E-03	3.000
118	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
119	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
120	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
121	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
122	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
123	[REDACTED]	chronic	alpha	Lognormal	2.42E-03	3.000
124	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
125	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
126	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
127	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
128	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
129	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
130	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
131	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
132	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
133	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
134	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
135	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
136	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
137	[REDACTED]	chronic	alpha	Lognormal	2.35E-03	3.000
138	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
139	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
140	[REDACTED]	chronic	alpha	Lognormal	2.38E-03	3.000
141	[REDACTED]	chronic	alpha	Lognormal	2.39E-03	3.000
142	[REDACTED]	chronic	alpha	Lognormal	2.41E-03	3.000
143	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
144	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
145	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
146	[REDACTED]	chronic	alpha	Lognormal	3.47E-06	3.000
147	[REDACTED]	chronic	alpha	Lognormal	6.82E-05	3.000
148	[REDACTED]	chronic	alpha	Lognormal	1.51E-04	3.000
149	[REDACTED]	chronic	alpha	Lognormal	2.43E-04	3.000
150	[REDACTED]	chronic	alpha	Lognormal	3.42E-04	3.000
151	[REDACTED]	chronic	alpha	Lognormal	4.49E-04	3.000
152	[REDACTED]	chronic	alpha	Lognormal	5.63E-04	3.000
153	[REDACTED]	chronic	alpha	Lognormal	6.85E-04	3.000
154	[REDACTED]	chronic	alpha	Lognormal	8.08E-04	3.000
155	[REDACTED]	chronic	alpha	Lognormal	9.36E-04	3.000
156	[REDACTED]	chronic	alpha	Lognormal	1.07E-03	3.000
157	[REDACTED]	chronic	alpha	Lognormal	1.21E-03	3.000
158	[REDACTED]	chronic	alpha	Lognormal	1.35E-03	3.000
159	[REDACTED]	chronic	alpha	Lognormal	1.49E-03	3.000
160	[REDACTED]	chronic	alpha	Lognormal	1.63E-03	3.000
161	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.000
162	[REDACTED]	chronic	alpha	Lognormal	1.90E-03	3.000
163	[REDACTED]	chronic	alpha	Lognormal	1.99E-03	3.000
164	[REDACTED]	chronic	alpha	Lognormal	2.08E-03	3.000
165	[REDACTED]	chronic	alpha	Lognormal	2.16E-03	3.000
166	[REDACTED]	chronic	alpha	Lognormal	2.22E-03	3.000
167	[REDACTED]	chronic	alpha	Lognormal	2.27E-03	3.000
168	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000

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Appendix II.A-3: IREP Input – [REDACTED] BCC [REDACTED] (continued)

169	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
170	[REDACTED]	chronic	alpha	Lognormal	2.40E-03	3.000
171	[REDACTED]	chronic	alpha	Lognormal	2.43E-03	3.000
172	[REDACTED]	chronic	alpha	Lognormal	2.46E-03	3.000
173	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
174	[REDACTED]	chronic	alpha	Lognormal	2.52E-03	3.000
175	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
176	[REDACTED]	chronic	alpha	Lognormal	2.57E-03	3.000
177	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
178	[REDACTED]	chronic	alpha	Lognormal	2.61E-03	3.000
179	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
180	[REDACTED]	chronic	alpha	Lognormal	2.64E-03	3.000
181	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
182	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
183	[REDACTED]	chronic	alpha	Lognormal	2.69E-03	3.000
184	[REDACTED]	chronic	alpha	Lognormal	2.70E-03	3.000
185	[REDACTED]	chronic	alpha	Lognormal	2.72E-03	3.000
186	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
187	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
188	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
189	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
190	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
191	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
192	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
193	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
194	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
195	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
196	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
197	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
198	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
199	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
200	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
201	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
202	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
203	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
204	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
205	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
206	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
207	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
208	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
209	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
210	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.005
211	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
212	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
213	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
214	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
215	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
216	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
217	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
218	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
219	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
220	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
221	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
222	[REDACTED]	acute	photons E=30-250keV	Normal	0.003	0.001
223	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.08E-04	3.000
224	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.18E-03	3.000
225	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.35E-03	3.000

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Appendix II.A-3: IREP Input – [REDACTED] BCC [REDACTED] (continued)

226	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
227	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
228	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
229	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
230	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
231	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
232	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
233	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
234	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
235	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
236	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
237	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
238	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
239	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
240	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
241	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
242	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
243	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
244	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
245	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
246	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
247	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
248	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
249	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
250	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
251	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
252	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
253	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
254	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
255	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
256	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.31E-03	3.000
257	[REDACTED]	chronic	electrons E>15keV	Lognormal	2.43E-04	3.000
258	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
259	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
260	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
261	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
262	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
263	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
264	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
265	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000

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APPENDIX II.A-4: IREP INPUT – [REDACTED] SCC [REDACTED]

<u>Exposure #</u>	<u>Exposure Year</u>	<u>Exposure Rate</u>	<u>Radiation Type</u>	<u>Dose Distribution Type</u>	<u>Parameter 1</u>	<u>Parameter 2</u>
1	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.008
2	[REDACTED]	acute	photons E=30-250keV	normal	0.115	0.035
3	[REDACTED]	acute	electrons E>15keV	normal	0.060	0.018
4	[REDACTED]	acute	electrons E>15keV	normal	0.227	0.068
5	[REDACTED]	acute	electrons E>15keV	normal	0.230	0.069
6	[REDACTED]	acute	electrons E>15keV	normal	0.028	0.008
7	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
8	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
9	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
10	[REDACTED]	acute	photons E=30-250keV	lognormal	0.015	1.52
11	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
12	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
13	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.081	1.52
14	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.020	1.52
15	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
16	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
17	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
18	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
19	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
20	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
21	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
22	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
23	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
24	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
25	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
26	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
27	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
28	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
29	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
30	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
31	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
32	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
33	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
34	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
35	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
36	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
37	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
38	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
39	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
40	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
41	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
42	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
43	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
44	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
45	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
46	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
47	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
48	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
49	[REDACTED]	acute	photons E=30-250keV	normal	0.27	0.081
50	[REDACTED]	acute	photons E=30-250keV	normal	0.27	0.081
51	[REDACTED]	acute	photons E=30-250keV	normal	0.27	0.081
52	[REDACTED]	acute	photons E=30-250keV	Normal	0.27	0.081
53	[REDACTED]	acute	electrons E>15keV	normal	6.99E-02	2.10E-02
54	[REDACTED]	acute	electrons E>15keV	normal	6.99E-02	2.10E-02

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Appendix II.A-4: IREP Input – [REDACTED] SCC [REDACTED] (continued)

55	[REDACTED]	acute	electrons E>15keV	normal	6.99E-02	2.10E-02
56	[REDACTED]	acute	electrons E>15keV	normal	6.99E-02	2.10E-02
57	[REDACTED]	chronic	alpha	lognormal	1.68E-04	3.00E+00
58	[REDACTED]	chronic	alpha	lognormal	6.09E-04	3.00E+00
59	[REDACTED]	chronic	alpha	lognormal	1.02E-03	3.00E+00
60	[REDACTED]	chronic	alpha	lognormal	1.41E-03	3.00E+00
61	[REDACTED]	chronic	alpha	lognormal	1.44E-03	3.00E+00
62	[REDACTED]	chronic	alpha	lognormal	1.51E-03	3.00E+00
63	[REDACTED]	chronic	alpha	lognormal	1.57E-03	3.00E+00
64	[REDACTED]	chronic	alpha	lognormal	1.61E-03	3.00E+00
65	[REDACTED]	chronic	alpha	lognormal	1.65E-03	3.00E+00
66	[REDACTED]	chronic	alpha	lognormal	1.68E-03	3.00E+00
67	[REDACTED]	chronic	alpha	lognormal	1.71E-03	3.00E+00
68	[REDACTED]	chronic	alpha	lognormal	1.73E-03	3.00E+00
69	[REDACTED]	chronic	alpha	lognormal	1.75E-03	3.00E+00
70	[REDACTED]	chronic	alpha	lognormal	1.76E-03	3.00E+00
71	[REDACTED]	chronic	alpha	lognormal	1.78E-03	3.00E+00
72	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
73	[REDACTED]	chronic	alpha	lognormal	1.80E-03	3.00E+00
74	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
75	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
76	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
77	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
78	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
79	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
80	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
81	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
82	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
83	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
84	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
85	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
86	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
87	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
88	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
89	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
90	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
91	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
92	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
93	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
94	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
95	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
96	[REDACTED]	chronic	alpha	lognormal	1.80E-03	3.00E+00
97	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
98	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
99	[REDACTED]	chronic	alpha	lognormal	1.78E-03	3.00E+00
100	[REDACTED]	chronic	alpha	lognormal	1.77E-03	3.00E+00
101	[REDACTED]	chronic	alpha	lognormal	1.77E-03	3.00E+00
102	[REDACTED]	chronic	alpha	lognormal	5.50E-04	3.00E+00
103	[REDACTED]	chronic	alpha	lognormal	7.88E-06	3.000
104	[REDACTED]	chronic	alpha	lognormal	1.96E-04	3.000
105	[REDACTED]	chronic	alpha	Lognormal	4.65E-04	3.000
106	[REDACTED]	chronic	alpha	Lognormal	7.08E-04	3.000
107	[REDACTED]	chronic	alpha	Lognormal	9.18E-04	3.000
108	[REDACTED]	chronic	alpha	Lognormal	1.11E-03	3.000
109	[REDACTED]	chronic	alpha	Lognormal	1.29E-03	3.000
110	[REDACTED]	chronic	alpha	Lognormal	1.45E-03	3.000
111	[REDACTED]	chronic	alpha	Lognormal	1.61E-03	3.000

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Appendix II.A-4: IREP Input – [REDACTED] SCC [REDACTED] (continued)

112	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.000
113	[REDACTED]	chronic	alpha	Lognormal	1.91E-03	3.000
114	[REDACTED]	chronic	alpha	Lognormal	2.06E-03	3.000
115	[REDACTED]	chronic	alpha	Lognormal	2.20E-03	3.000
116	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
117	[REDACTED]	chronic	alpha	Lognormal	2.48E-03	3.000
118	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
119	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
120	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
121	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
122	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
123	[REDACTED]	chronic	alpha	Lognormal	2.42E-03	3.000
124	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
125	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
126	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
127	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
128	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
129	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
130	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
131	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
132	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
133	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
134	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
135	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
136	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
137	[REDACTED]	chronic	alpha	Lognormal	2.35E-03	3.000
138	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
139	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
140	[REDACTED]	chronic	alpha	Lognormal	2.38E-03	3.000
141	[REDACTED]	chronic	alpha	Lognormal	2.39E-03	3.000
142	[REDACTED]	chronic	alpha	Lognormal	2.41E-03	3.000
143	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
144	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
145	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
146	[REDACTED]	chronic	alpha	Lognormal	3.47E-06	3.000
147	[REDACTED]	chronic	alpha	Lognormal	6.82E-05	3.000
148	[REDACTED]	chronic	alpha	Lognormal	1.51E-04	3.000
149	[REDACTED]	chronic	alpha	Lognormal	2.43E-04	3.000
150	[REDACTED]	chronic	alpha	Lognormal	3.42E-04	3.000
151	[REDACTED]	chronic	alpha	Lognormal	4.49E-04	3.000
152	[REDACTED]	chronic	alpha	Lognormal	5.63E-04	3.000
153	[REDACTED]	chronic	alpha	Lognormal	6.85E-04	3.000
154	[REDACTED]	chronic	alpha	Lognormal	8.08E-04	3.000
155	[REDACTED]	chronic	alpha	Lognormal	9.36E-04	3.000
156	[REDACTED]	chronic	alpha	Lognormal	1.07E-03	3.000
157	[REDACTED]	chronic	alpha	Lognormal	1.21E-03	3.000
158	[REDACTED]	chronic	alpha	Lognormal	1.35E-03	3.000
159	[REDACTED]	chronic	alpha	Lognormal	1.49E-03	3.000
160	[REDACTED]	chronic	alpha	Lognormal	1.63E-03	3.000
161	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.000
162	[REDACTED]	chronic	alpha	Lognormal	1.90E-03	3.000
163	[REDACTED]	chronic	alpha	Lognormal	1.99E-03	3.000
164	[REDACTED]	chronic	alpha	Lognormal	2.08E-03	3.000
165	[REDACTED]	chronic	alpha	Lognormal	2.16E-03	3.000
166	[REDACTED]	chronic	alpha	Lognormal	2.22E-03	3.000
167	[REDACTED]	chronic	alpha	Lognormal	2.27E-03	3.000
168	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000

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Appendix II.A-4: IREP Input – [REDACTED] SCC [REDACTED] (continued)

169	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
170	[REDACTED]	chronic	alpha	Lognormal	2.40E-03	3.000
171	[REDACTED]	chronic	alpha	Lognormal	2.43E-03	3.000
172	[REDACTED]	chronic	alpha	Lognormal	2.46E-03	3.000
173	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
174	[REDACTED]	chronic	alpha	Lognormal	2.52E-03	3.000
175	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
176	[REDACTED]	chronic	alpha	Lognormal	2.57E-03	3.000
177	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
178	[REDACTED]	chronic	alpha	Lognormal	2.61E-03	3.000
179	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
180	[REDACTED]	chronic	alpha	Lognormal	2.64E-03	3.000
181	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
182	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
183	[REDACTED]	chronic	alpha	Lognormal	2.69E-03	3.000
184	[REDACTED]	chronic	alpha	Lognormal	2.70E-03	3.000
185	[REDACTED]	chronic	alpha	Lognormal	2.72E-03	3.000
186	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
187	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
188	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
189	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
190	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
191	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
192	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
193	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
194	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
195	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
196	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
197	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
198	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
199	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
200	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
201	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
202	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
203	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
204	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
205	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
206	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
207	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
208	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
209	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
210	[REDACTED]	acute	photons E=30-250keV	Normal	0.181	0.0543
211	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
212	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
213	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
214	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
215	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
216	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
217	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
218	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
219	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
220	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
221	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
222	[REDACTED]	acute	photons E=30-250keV	Normal	0.031	0.0093
223	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.08E-04	3.000
224	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.18E-03	3.000
225	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.35E-03	3.000

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Appendix II.A-4: IREP Input – [REDACTED] SCC [REDACTED] (continued)

226	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
227	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
228	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
229	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
230	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
231	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
232	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
233	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
234	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
235	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
236	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
237	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
238	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
239	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
240	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
241	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
242	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
243	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
244	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
245	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
246	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
247	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
248	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
249	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
250	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
251	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
252	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
253	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
254	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
255	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
256	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.31E-03	3.000
257	[REDACTED]	chronic	electrons E>15keV	Lognormal	2.43E-04	3.000
258	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
259	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
260	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
261	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
262	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
263	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
264	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
265	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000

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APPENDIX II.A-5: IREP INPUT – [REDACTED] BCC [REDACTED]

<u>Exposure #</u>	<u>Exposure Year</u>	<u>Exposure Rate</u>	<u>Radiation Type</u>	<u>Dose Distribution Type</u>	<u>Parameter 1</u>	<u>Parameter 2</u>
1	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.008
2	[REDACTED]	acute	photons E=30-250keV	normal	0.115	0.035
3	[REDACTED]	acute	electrons E>15keV	normal	0.070	0.021
4	[REDACTED]	acute	electrons E>15keV	normal	0.265	0.080
5	[REDACTED]	acute	electrons E>15keV	normal	0.269	0.081
6	[REDACTED]	acute	electrons E>15keV	normal	0.033	0.010
7	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
8	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
9	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
10	[REDACTED]	acute	photons E=30-250keV	lognormal	0.015	1.52
11	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
12	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
13	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.081	1.52
14	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.020	1.52
15	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
16	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
17	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
18	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
19	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
20	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
21	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
22	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
23	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
24	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
25	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
26	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
27	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
28	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
29	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
30	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
31	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
32	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
33	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
34	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
35	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
36	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
37	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
38	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
39	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
40	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
41	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
42	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
43	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
44	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
45	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
46	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
47	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
48	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
49	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
50	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
51	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
52	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.0081
53	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
54	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02

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Appendix II.A-5: IREP Input – [REDACTED] BCC [REDACTED] (continued)

55	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
56	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
57	[REDACTED]	chronic	alpha	lognormal	1.68E-04	3.00E+00
58	[REDACTED]	chronic	alpha	lognormal	6.09E-04	3.00E+00
59	[REDACTED]	chronic	alpha	lognormal	1.02E-03	3.00E+00
60	[REDACTED]	chronic	alpha	lognormal	1.41E-03	3.00E+00
61	[REDACTED]	chronic	alpha	lognormal	1.44E-03	3.00E+00
62	[REDACTED]	chronic	alpha	lognormal	1.51E-03	3.00E+00
63	[REDACTED]	chronic	alpha	lognormal	1.57E-03	3.00E+00
64	[REDACTED]	chronic	alpha	lognormal	1.61E-03	3.00E+00
65	[REDACTED]	chronic	alpha	lognormal	1.65E-03	3.00E+00
66	[REDACTED]	chronic	alpha	lognormal	1.68E-03	3.00E+00
67	[REDACTED]	chronic	alpha	lognormal	1.71E-03	3.00E+00
68	[REDACTED]	chronic	alpha	lognormal	1.73E-03	3.00E+00
69	[REDACTED]	chronic	alpha	lognormal	1.75E-03	3.00E+00
70	[REDACTED]	chronic	alpha	lognormal	1.76E-03	3.00E+00
71	[REDACTED]	chronic	alpha	lognormal	1.78E-03	3.00E+00
72	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
73	[REDACTED]	chronic	alpha	lognormal	1.80E-03	3.00E+00
74	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
75	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
76	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
77	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
78	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
79	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
80	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
81	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
82	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
83	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
84	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
85	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
86	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
87	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
88	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
89	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
90	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
91	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
92	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
93	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
94	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
95	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
96	[REDACTED]	chronic	alpha	lognormal	1.80E-03	3.00E+00
97	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
98	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
99	[REDACTED]	chronic	alpha	lognormal	1.78E-03	3.00E+00
100	[REDACTED]	chronic	alpha	lognormal	1.77E-03	3.00E+00
101	[REDACTED]	chronic	alpha	lognormal	1.77E-03	3.00E+00
102	[REDACTED]	chronic	alpha	lognormal	1.76E-03	3.00E+00
103	[REDACTED]	chronic	alpha	lognormal	2.11E-04	3.00E+00
104	[REDACTED]	chronic	alpha	lognormal	7.88E-06	3.000
105	[REDACTED]	chronic	alpha	lognormal	1.96E-04	3.000
106	[REDACTED]	chronic	alpha	lognormal	4.65E-04	3.000
107	[REDACTED]	chronic	alpha	lognormal	7.08E-04	3.000
108	[REDACTED]	chronic	alpha	lognormal	9.18E-04	3.000
109	[REDACTED]	chronic	alpha	lognormal	1.11E-03	3.000
110	[REDACTED]	chronic	alpha	lognormal	1.29E-03	3.000
111	[REDACTED]	chronic	alpha	lognormal	1.45E-03	3.000

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Appendix II.A-5: IREP Input – [REDACTED] BCC [REDACTED] (continued)

112	[REDACTED]	chronic	alpha	lognormal	1.61E-03	3.000
113	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.000
114	[REDACTED]	chronic	alpha	Lognormal	1.91E-03	3.000
115	[REDACTED]	chronic	alpha	Lognormal	2.06E-03	3.000
116	[REDACTED]	chronic	alpha	Lognormal	2.20E-03	3.000
117	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
118	[REDACTED]	chronic	alpha	Lognormal	2.48E-03	3.000
119	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
120	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
121	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
122	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
123	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
124	[REDACTED]	chronic	alpha	Lognormal	2.42E-03	3.000
125	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
126	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
127	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
128	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
129	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
130	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
131	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
132	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
133	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
134	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
135	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
136	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
137	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
138	[REDACTED]	chronic	alpha	Lognormal	2.35E-03	3.000
139	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
140	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
141	[REDACTED]	chronic	alpha	Lognormal	2.38E-03	3.000
142	[REDACTED]	chronic	alpha	Lognormal	2.39E-03	3.000
143	[REDACTED]	chronic	alpha	Lognormal	2.41E-03	3.000
144	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
145	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
146	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
147	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
148	[REDACTED]	chronic	alpha	Lognormal	3.47E-06	3.000
149	[REDACTED]	chronic	alpha	Lognormal	6.82E-05	3.000
150	[REDACTED]	chronic	alpha	Lognormal	1.51E-04	3.000
151	[REDACTED]	chronic	alpha	Lognormal	2.43E-04	3.000
152	[REDACTED]	chronic	alpha	Lognormal	3.42E-04	3.000
153	[REDACTED]	chronic	alpha	Lognormal	4.49E-04	3.000
154	[REDACTED]	chronic	alpha	Lognormal	5.63E-04	3.000
155	[REDACTED]	chronic	alpha	Lognormal	6.85E-04	3.000
156	[REDACTED]	chronic	alpha	Lognormal	8.08E-04	3.000
157	[REDACTED]	chronic	alpha	Lognormal	9.36E-04	3.000
158	[REDACTED]	chronic	alpha	Lognormal	1.07E-03	3.000
159	[REDACTED]	chronic	alpha	Lognormal	1.21E-03	3.000
160	[REDACTED]	chronic	alpha	Lognormal	1.35E-03	3.000
161	[REDACTED]	chronic	alpha	Lognormal	1.49E-03	3.000
162	[REDACTED]	chronic	alpha	Lognormal	1.63E-03	3.000
163	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.000
164	[REDACTED]	chronic	alpha	Lognormal	1.90E-03	3.000
165	[REDACTED]	chronic	alpha	Lognormal	1.99E-03	3.000
166	[REDACTED]	chronic	alpha	Lognormal	2.08E-03	3.000
167	[REDACTED]	chronic	alpha	Lognormal	2.16E-03	3.000
168	[REDACTED]	chronic	alpha	Lognormal	2.22E-03	3.000

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Appendix II.A-5: IREP Input – [REDACTED] BCC [REDACTED] (continued)

169	[REDACTED]	chronic	alpha	Lognormal	2.27E-03	3.000
170	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
171	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
172	[REDACTED]	chronic	alpha	Lognormal	2.40E-03	3.000
173	[REDACTED]	chronic	alpha	Lognormal	2.43E-03	3.000
174	[REDACTED]	chronic	alpha	Lognormal	2.46E-03	3.000
175	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
176	[REDACTED]	chronic	alpha	Lognormal	2.52E-03	3.000
177	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
178	[REDACTED]	chronic	alpha	Lognormal	2.57E-03	3.000
179	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
180	[REDACTED]	chronic	alpha	Lognormal	2.61E-03	3.000
181	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
182	[REDACTED]	chronic	alpha	Lognormal	2.64E-03	3.000
183	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
184	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
185	[REDACTED]	chronic	alpha	Lognormal	2.69E-03	3.000
186	[REDACTED]	chronic	alpha	Lognormal	2.70E-03	3.000
187	[REDACTED]	chronic	alpha	Lognormal	2.72E-03	3.000
188	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
189	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
190	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
191	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
192	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
193	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
194	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
195	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
196	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
197	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
198	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
199	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
200	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
201	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
202	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
203	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
204	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
205	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
206	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
207	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
208	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
209	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
210	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
211	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
212	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
213	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
214	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
215	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
216	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
217	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
218	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
219	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
220	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
221	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
222	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
223	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
224	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
225	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04

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Appendix II.A-5: IREP Input – [REDACTED] BCC [REDACTED] (continued)

226	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.08E-04	3.000
227	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.18E-03	3.000
228	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.35E-03	3.000
229	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
230	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
231	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
232	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
233	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
234	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
235	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
236	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
237	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
238	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
239	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
240	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
241	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
242	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
243	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
244	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
245	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
246	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
247	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
248	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
249	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
250	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
251	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
252	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
253	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
254	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
255	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
256	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
257	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
258	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
259	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.31E-03	3.000
260	[REDACTED]	chronic	electrons E>15keV	Lognormal	2.43E-04	3.000
261	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
262	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
263	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
264	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
265	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
266	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
267	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
268	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
269	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000

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APPENDIX II.A-6: IREP INPUT – [REDACTED] BCC [REDACTED]

<u>Exposure #</u>	<u>Exposure Year</u>	<u>Exposure Rate</u>	<u>Radiation Type</u>	<u>Dose Distribution Type</u>	<u>Parameter 1</u>	<u>Parameter 2</u>
1	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.008
2	[REDACTED]	acute	photons E=30-250keV	normal	0.115	0.035
3	[REDACTED]	acute	electrons E>15keV	normal	0.070	0.021
4	[REDACTED]	acute	electrons E>15keV	normal	0.265	0.080
5	[REDACTED]	acute	electrons E>15keV	normal	0.269	0.081
6	[REDACTED]	acute	electrons E>15keV	normal	0.033	0.010
7	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
8	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
9	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
10	[REDACTED]	acute	photons E=30-250keV	lognormal	0.015	1.52
11	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
12	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
13	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.081	1.52
14	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.020	1.52
15	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
16	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
17	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
18	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
19	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
20	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
21	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
22	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
23	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
24	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
25	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
26	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
27	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
28	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
29	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
30	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
31	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
32	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
33	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
34	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
35	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
36	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
37	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
38	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
39	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
40	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
41	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
42	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
43	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
44	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
45	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
46	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
47	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
48	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
49	[REDACTED]	acute	photons E=30-250keV	normal	0.0064	0.00192
50	[REDACTED]	acute	photons E=30-250keV	normal	0.0064	0.00192
51	[REDACTED]	acute	photons E=30-250keV	normal	0.0064	0.00192
52	[REDACTED]	acute	photons E=30-250keV	Normal	0.0064	0.00192
53	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
54	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02

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Appendix II.A-6: IREP Input – [REDACTED] BCC [REDACTED] (continued)

55	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
56	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
57	[REDACTED]	chronic	alpha	lognormal	1.68E-04	3.00E+00
58	[REDACTED]	chronic	alpha	lognormal	6.09E-04	3.00E+00
59	[REDACTED]	chronic	alpha	lognormal	1.02E-03	3.00E+00
60	[REDACTED]	chronic	alpha	lognormal	1.41E-03	3.00E+00
61	[REDACTED]	chronic	alpha	lognormal	1.44E-03	3.00E+00
62	[REDACTED]	chronic	alpha	lognormal	1.51E-03	3.00E+00
63	[REDACTED]	chronic	alpha	lognormal	1.57E-03	3.00E+00
64	[REDACTED]	chronic	alpha	lognormal	1.61E-03	3.00E+00
65	[REDACTED]	chronic	alpha	lognormal	1.65E-03	3.00E+00
66	[REDACTED]	chronic	alpha	lognormal	1.68E-03	3.00E+00
67	[REDACTED]	chronic	alpha	lognormal	1.71E-03	3.00E+00
68	[REDACTED]	chronic	alpha	lognormal	1.73E-03	3.00E+00
69	[REDACTED]	chronic	alpha	lognormal	1.75E-03	3.00E+00
70	[REDACTED]	chronic	alpha	lognormal	1.76E-03	3.00E+00
71	[REDACTED]	chronic	alpha	lognormal	1.78E-03	3.00E+00
72	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
73	[REDACTED]	chronic	alpha	lognormal	1.80E-03	3.00E+00
74	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
75	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
76	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
77	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
78	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
79	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
80	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
81	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
82	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
83	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
84	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
85	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
86	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
87	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
88	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
89	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
90	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
91	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
92	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
93	[REDACTED]	chronic	alpha	Lognormal	1.82E-03	3.00E+00
94	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
95	[REDACTED]	chronic	alpha	Lognormal	1.81E-03	3.00E+00
96	[REDACTED]	chronic	alpha	Lognormal	1.80E-03	3.00E+00
97	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00
98	[REDACTED]	chronic	alpha	Lognormal	1.79E-03	3.00E+00
99	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.00E+00
100	[REDACTED]	chronic	alpha	Lognormal	1.77E-03	3.00E+00
101	[REDACTED]	chronic	alpha	Lognormal	1.77E-03	3.00E+00
102	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.00E+00
103	[REDACTED]	chronic	alpha	Lognormal	2.11E-04	3.00E+00
104	[REDACTED]	chronic	alpha	Lognormal	7.88E-06	3.000
105	[REDACTED]	chronic	alpha	Lognormal	1.96E-04	3.000
106	[REDACTED]	chronic	alpha	Lognormal	4.65E-04	3.000
107	[REDACTED]	chronic	alpha	Lognormal	7.08E-04	3.000
108	[REDACTED]	chronic	alpha	Lognormal	9.18E-04	3.000
109	[REDACTED]	chronic	alpha	Lognormal	1.11E-03	3.000
110	[REDACTED]	chronic	alpha	Lognormal	1.29E-03	3.000
111	[REDACTED]	chronic	alpha	Lognormal	1.45E-03	3.000

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Appendix II.A-6: IREP Input – [REDACTED] BCC [REDACTED] (continued)

112	[REDACTED]	chronic	alpha	Lognormal	1.61E-03	3.000
113	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.000
114	[REDACTED]	chronic	alpha	Lognormal	1.91E-03	3.000
115	[REDACTED]	chronic	alpha	Lognormal	2.06E-03	3.000
116	[REDACTED]	chronic	alpha	Lognormal	2.20E-03	3.000
117	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
118	[REDACTED]	chronic	alpha	Lognormal	2.48E-03	3.000
119	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
120	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
121	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
122	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
123	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
124	[REDACTED]	chronic	alpha	Lognormal	2.42E-03	3.000
125	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
126	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
127	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
128	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
129	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
130	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
131	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
132	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
133	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
134	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
135	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
136	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
137	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
138	[REDACTED]	chronic	alpha	Lognormal	2.35E-03	3.000
139	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
140	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
141	[REDACTED]	chronic	alpha	Lognormal	2.38E-03	3.000
142	[REDACTED]	chronic	alpha	Lognormal	2.39E-03	3.000
143	[REDACTED]	chronic	alpha	Lognormal	2.41E-03	3.000
144	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
145	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
146	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
147	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
148	[REDACTED]	chronic	alpha	Lognormal	3.47E-06	3.000
149	[REDACTED]	chronic	alpha	Lognormal	6.82E-05	3.000
150	[REDACTED]	chronic	alpha	Lognormal	1.51E-04	3.000
151	[REDACTED]	chronic	alpha	Lognormal	2.43E-04	3.000
152	[REDACTED]	chronic	alpha	Lognormal	3.42E-04	3.000
153	[REDACTED]	chronic	alpha	Lognormal	4.49E-04	3.000
154	[REDACTED]	chronic	alpha	Lognormal	5.63E-04	3.000
155	[REDACTED]	chronic	alpha	Lognormal	6.85E-04	3.000
156	[REDACTED]	chronic	alpha	Lognormal	8.08E-04	3.000
157	[REDACTED]	chronic	alpha	Lognormal	9.36E-04	3.000
158	[REDACTED]	chronic	alpha	Lognormal	1.07E-03	3.000
159	[REDACTED]	chronic	alpha	Lognormal	1.21E-03	3.000
160	[REDACTED]	chronic	alpha	Lognormal	1.35E-03	3.000
161	[REDACTED]	chronic	alpha	Lognormal	1.49E-03	3.000
162	[REDACTED]	chronic	alpha	Lognormal	1.63E-03	3.000
163	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.000
164	[REDACTED]	chronic	alpha	Lognormal	1.90E-03	3.000
165	[REDACTED]	chronic	alpha	Lognormal	1.99E-03	3.000
166	[REDACTED]	chronic	alpha	Lognormal	2.08E-03	3.000
167	[REDACTED]	chronic	alpha	Lognormal	2.16E-03	3.000
168	[REDACTED]	chronic	alpha	Lognormal	2.22E-03	3.000

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Appendix II.A-6: IREP Input – [REDACTED] BCC [REDACTED] (continued)

169	[REDACTED]	chronic	alpha	Lognormal	2.27E-03	3.000
170	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
171	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
172	[REDACTED]	chronic	alpha	Lognormal	2.40E-03	3.000
173	[REDACTED]	chronic	alpha	Lognormal	2.43E-03	3.000
174	[REDACTED]	chronic	alpha	Lognormal	2.46E-03	3.000
175	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
176	[REDACTED]	chronic	alpha	Lognormal	2.52E-03	3.000
177	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
178	[REDACTED]	chronic	alpha	Lognormal	2.57E-03	3.000
179	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
180	[REDACTED]	chronic	alpha	Lognormal	2.61E-03	3.000
181	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
182	[REDACTED]	chronic	alpha	Lognormal	2.64E-03	3.000
183	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
184	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
185	[REDACTED]	chronic	alpha	Lognormal	2.69E-03	3.000
186	[REDACTED]	chronic	alpha	Lognormal	2.70E-03	3.000
187	[REDACTED]	chronic	alpha	Lognormal	2.72E-03	3.000
188	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
189	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
190	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
191	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
192	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
193	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
194	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
195	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
196	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
197	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
198	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
199	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
200	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
201	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
202	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
203	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
204	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
205	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
206	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
207	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
208	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
209	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
210	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
211	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
212	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
213	[REDACTED]	acute	photons E=30-250keV	Normal	5.98E-03	1.79E-03
214	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
215	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
216	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
217	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
218	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
219	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
220	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
221	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
222	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
223	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
224	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04
225	[REDACTED]	acute	photons E=30-250keV	Normal	1.36E-03	4.08E-04

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Appendix II.A-6: IREP Input – [REDACTED] BCC [REDACTED] (continued)

226	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.08E-04	3.000
227	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.18E-03	3.000
228	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.35E-03	3.000
229	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
230	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
231	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
232	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
233	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
234	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
235	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
236	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
237	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
238	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
239	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
240	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
241	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
242	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
243	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
244	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
245	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
246	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
247	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
248	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
249	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
250	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
251	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
252	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
253	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
254	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
255	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
256	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
257	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
258	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
259	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.31E-03	3.000
260	[REDACTED]	chronic	electrons E>15keV	Lognormal	2.43E-04	3.000
261	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
262	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
263	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
264	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
265	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
266	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
267	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
268	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
269	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000

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APPENDIX II.A-7: IREP INPUT – [REDACTED] SCC [REDACTED]

<u>Exposure #</u>	<u>Exposure Year</u>	<u>Exposure Rate</u>	<u>Radiation Type</u>	<u>Dose Distribution Type</u>	<u>Parameter 1</u>	<u>Parameter 2</u>
1	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.008
2	[REDACTED]	acute	photons E=30-250keV	normal	0.115	0.035
3	[REDACTED]	acute	electrons E>15keV	normal	0.070	0.021
4	[REDACTED]	acute	electrons E>15keV	normal	0.265	0.080
5	[REDACTED]	acute	electrons E>15keV	normal	0.269	0.081
6	[REDACTED]	acute	electrons E>15keV	normal	0.033	0.010
7	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
8	[REDACTED]	acute	photons E=30-250keV	lognormal	0.045	1.52
9	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
10	[REDACTED]	acute	photons E=30-250keV	lognormal	0.015	1.52
11	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
12	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.061	1.52
13	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.081	1.52
14	[REDACTED]	chronic	neutrons E=100keV-2MeV	lognormal	0.020	1.52
15	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
16	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
17	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
18	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
19	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
20	[REDACTED]	acute	photons E=30-250keV	lognormal	0.06	1.52
21	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
22	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
23	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
24	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
25	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
26	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
27	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
28	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
29	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
30	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
31	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
32	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
33	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
34	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
35	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
36	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
37	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
38	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
39	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
40	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
41	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
42	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
43	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
44	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
45	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
46	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
47	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
48	[REDACTED]	acute	photons E=30-250keV	lognormal	0.02	1.52
49	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
50	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
51	[REDACTED]	acute	photons E=30-250keV	normal	0.027	0.0081
52	[REDACTED]	acute	photons E=30-250keV	Normal	0.027	0.0081
53	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
54	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02

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Appendix II.A-7: IREP Input – [REDACTED] SCC [REDACTED] (continued)

55	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
56	[REDACTED]	acute	electrons E>15keV	Normal	6.99E-02	2.10E-02
57	[REDACTED]	chronic	alpha	lognormal	1.68E-04	3.00E+00
58	[REDACTED]	chronic	alpha	lognormal	6.09E-04	3.00E+00
59	[REDACTED]	chronic	alpha	lognormal	1.02E-03	3.00E+00
60	[REDACTED]	chronic	alpha	lognormal	1.41E-03	3.00E+00
61	[REDACTED]	chronic	alpha	lognormal	1.44E-03	3.00E+00
62	[REDACTED]	chronic	alpha	lognormal	1.51E-03	3.00E+00
63	[REDACTED]	chronic	alpha	lognormal	1.57E-03	3.00E+00
64	[REDACTED]	chronic	alpha	lognormal	1.61E-03	3.00E+00
65	[REDACTED]	chronic	alpha	lognormal	1.65E-03	3.00E+00
66	[REDACTED]	chronic	alpha	lognormal	1.68E-03	3.00E+00
67	[REDACTED]	chronic	alpha	lognormal	1.71E-03	3.00E+00
68	[REDACTED]	chronic	alpha	lognormal	1.73E-03	3.00E+00
69	[REDACTED]	chronic	alpha	lognormal	1.75E-03	3.00E+00
70	[REDACTED]	chronic	alpha	lognormal	1.76E-03	3.00E+00
71	[REDACTED]	chronic	alpha	lognormal	1.78E-03	3.00E+00
72	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
73	[REDACTED]	chronic	alpha	lognormal	1.80E-03	3.00E+00
74	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
75	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
76	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
77	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
78	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
79	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
80	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
81	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
82	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
83	[REDACTED]	chronic	alpha	lognormal	1.85E-03	3.00E+00
84	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
85	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
86	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
87	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
88	[REDACTED]	chronic	alpha	lognormal	1.84E-03	3.00E+00
89	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
90	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
91	[REDACTED]	chronic	alpha	lognormal	1.83E-03	3.00E+00
92	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
93	[REDACTED]	chronic	alpha	lognormal	1.82E-03	3.00E+00
94	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
95	[REDACTED]	chronic	alpha	lognormal	1.81E-03	3.00E+00
96	[REDACTED]	chronic	alpha	lognormal	1.80E-03	3.00E+00
97	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
98	[REDACTED]	chronic	alpha	lognormal	1.79E-03	3.00E+00
99	[REDACTED]	chronic	alpha	lognormal	1.78E-03	3.00E+00
100	[REDACTED]	chronic	alpha	lognormal	1.77E-03	3.00E+00
101	[REDACTED]	chronic	alpha	lognormal	1.77E-03	3.00E+00
102	[REDACTED]	chronic	alpha	lognormal	1.76E-03	3.00E+00
103	[REDACTED]	chronic	alpha	lognormal	1.76E-03	3.00E+00
104	[REDACTED]	chronic	alpha	lognormal	3.16E-04	3.00E+00
105	[REDACTED]	chronic	alpha	lognormal	7.88E-06	3.000
106	[REDACTED]	chronic	alpha	lognormal	1.96E-04	3.000
107	[REDACTED]	chronic	alpha	lognormal	4.65E-04	3.000
108	[REDACTED]	chronic	alpha	lognormal	7.08E-04	3.000
109	[REDACTED]	chronic	alpha	lognormal	9.18E-04	3.000
110	[REDACTED]	chronic	alpha	lognormal	1.11E-03	3.000
111	[REDACTED]	chronic	alpha	lognormal	1.29E-03	3.000

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Appendix II.A-7: IREP Input – [REDACTED] SCC [REDACTED] (continued)

112	[REDACTED]	chronic	alpha	lognormal	1.45E-03	3.000
113	[REDACTED]	chronic	alpha	lognormal	1.61E-03	3.000
114	[REDACTED]	chronic	alpha	Lognormal	1.76E-03	3.000
115	[REDACTED]	chronic	alpha	Lognormal	1.91E-03	3.000
116	[REDACTED]	chronic	alpha	Lognormal	2.06E-03	3.000
117	[REDACTED]	chronic	alpha	Lognormal	2.20E-03	3.000
118	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
119	[REDACTED]	chronic	alpha	Lognormal	2.48E-03	3.000
120	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
121	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
122	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
123	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
124	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
125	[REDACTED]	chronic	alpha	Lognormal	2.42E-03	3.000
126	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
127	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
128	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
129	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
130	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
131	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
132	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
133	[REDACTED]	chronic	alpha	Lognormal	2.30E-03	3.000
134	[REDACTED]	chronic	alpha	Lognormal	2.31E-03	3.000
135	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
136	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
137	[REDACTED]	chronic	alpha	Lognormal	2.33E-03	3.000
138	[REDACTED]	chronic	alpha	Lognormal	2.34E-03	3.000
139	[REDACTED]	chronic	alpha	Lognormal	2.35E-03	3.000
140	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
141	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
142	[REDACTED]	chronic	alpha	Lognormal	2.38E-03	3.000
143	[REDACTED]	chronic	alpha	Lognormal	2.39E-03	3.000
144	[REDACTED]	chronic	alpha	Lognormal	2.41E-03	3.000
145	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
146	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
147	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
148	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
149	[REDACTED]	chronic	alpha	Lognormal	9.09E-04	3.000
150	[REDACTED]	chronic	alpha	Lognormal	3.47E-06	3.000
151	[REDACTED]	chronic	alpha	Lognormal	6.82E-05	3.000
152	[REDACTED]	chronic	alpha	Lognormal	1.51E-04	3.000
153	[REDACTED]	chronic	alpha	Lognormal	2.43E-04	3.000
154	[REDACTED]	chronic	alpha	Lognormal	3.42E-04	3.000
155	[REDACTED]	chronic	alpha	Lognormal	4.49E-04	3.000
156	[REDACTED]	chronic	alpha	Lognormal	5.63E-04	3.000
157	[REDACTED]	chronic	alpha	Lognormal	6.85E-04	3.000
158	[REDACTED]	chronic	alpha	Lognormal	8.08E-04	3.000
159	[REDACTED]	chronic	alpha	Lognormal	9.36E-04	3.000
160	[REDACTED]	chronic	alpha	Lognormal	1.07E-03	3.000
161	[REDACTED]	chronic	alpha	Lognormal	1.21E-03	3.000
162	[REDACTED]	chronic	alpha	Lognormal	1.35E-03	3.000
163	[REDACTED]	chronic	alpha	Lognormal	1.49E-03	3.000
164	[REDACTED]	chronic	alpha	Lognormal	1.63E-03	3.000
165	[REDACTED]	chronic	alpha	Lognormal	1.78E-03	3.000
166	[REDACTED]	chronic	alpha	Lognormal	1.90E-03	3.000
167	[REDACTED]	chronic	alpha	Lognormal	1.99E-03	3.000
168	[REDACTED]	chronic	alpha	Lognormal	2.08E-03	3.000

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Appendix II.A-7: IREP Input – [REDACTED] SCC [REDACTED] (continued)

169	[REDACTED]	chronic	alpha	Lognormal	2.16E-03	3.000
170	[REDACTED]	chronic	alpha	Lognormal	2.22E-03	3.000
171	[REDACTED]	chronic	alpha	Lognormal	2.27E-03	3.000
172	[REDACTED]	chronic	alpha	Lognormal	2.32E-03	3.000
173	[REDACTED]	chronic	alpha	Lognormal	2.37E-03	3.000
174	[REDACTED]	chronic	alpha	Lognormal	2.40E-03	3.000
175	[REDACTED]	chronic	alpha	Lognormal	2.43E-03	3.000
176	[REDACTED]	chronic	alpha	Lognormal	2.46E-03	3.000
177	[REDACTED]	chronic	alpha	Lognormal	2.50E-03	3.000
178	[REDACTED]	chronic	alpha	Lognormal	2.52E-03	3.000
179	[REDACTED]	chronic	alpha	Lognormal	2.55E-03	3.000
180	[REDACTED]	chronic	alpha	Lognormal	2.57E-03	3.000
181	[REDACTED]	chronic	alpha	Lognormal	2.60E-03	3.000
182	[REDACTED]	chronic	alpha	Lognormal	2.61E-03	3.000
183	[REDACTED]	chronic	alpha	Lognormal	2.63E-03	3.000
184	[REDACTED]	chronic	alpha	Lognormal	2.64E-03	3.000
185	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
186	[REDACTED]	chronic	alpha	Lognormal	2.67E-03	3.000
187	[REDACTED]	chronic	alpha	Lognormal	2.69E-03	3.000
188	[REDACTED]	chronic	alpha	Lognormal	2.70E-03	3.000
189	[REDACTED]	chronic	alpha	Lognormal	2.72E-03	3.000
190	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
191	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
192	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
193	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
194	[REDACTED]	chronic	alpha	Lognormal	1.03E-03	3.000
195	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
196	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
197	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
198	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
199	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
200	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
201	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
202	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
203	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
204	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
205	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
206	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
207	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
208	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
209	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
210	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
211	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
212	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
213	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
214	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
215	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
216	[REDACTED]	acute	photons E=30-250keV	Normal	0.018	0.0054
217	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
218	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
219	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
220	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
221	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
222	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
223	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
224	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
225	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093

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Appendix II.A-7: IREP Input – [REDACTED] SCC [REDACTED] (continued)

226	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
227	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
228	[REDACTED]	acute	photons E=30-250keV	Normal	0.0031	0.00093
229	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.08E-04	3.000
230	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.18E-03	3.000
231	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.35E-03	3.000
232	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
233	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
234	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
235	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
236	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
237	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
238	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
239	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
240	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
241	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
242	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
243	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
244	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
245	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
246	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
247	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
248	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
249	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
250	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
251	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
252	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
253	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
254	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
255	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
256	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
257	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
258	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
259	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
260	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
261	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.36E-03	3.000
262	[REDACTED]	chronic	electrons E>15keV	Lognormal	1.31E-03	3.000
263	[REDACTED]	chronic	electrons E>15keV	Lognormal	2.43E-04	3.000
264	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
265	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
266	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
267	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
268	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
269	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
270	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
271	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
272	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000
273	[REDACTED]	chronic	electrons E>15keV	Lognormal	9.12E-06	3.000

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