

# APPENDIX I

## WORKFORCE ESTIMATES

This appendix presents the estimated number of workers required to perform construction, operations, deactivation, closure, and decommissioning tasks under each of the alternatives presented in this *Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington*.

### I.1 INTRODUCTION

Full-time-equivalent (FTE) estimates were based on information provided in data reports prepared to support this environmental impact statement (SAIC 2010a, 2010b, 2010c). The total number of FTEs for each activity was calculated based on the estimated labor hours for onsite radiological, onsite nonradiological, and offsite nonradiological worker categories. For some activities, nonradiological worker FTEs are further subdivided into construction, exempt, and design categories. Construction refers to the labor force used to perform construction activities, including manual and nonmanual personnel. Exempt refers to salaried (exempt from overtime) construction labor force and support personnel. Design refers to architect-engineer workforce personnel. The total number of hours was divided by the number of years for each activity. The hours per year were then divided by an assumed 2,080 hours worked per year (40 hours per week multiplied by 52 weeks) to get the number of FTEs per year. The estimated numbers of FTEs per year for each activity were then combined to get the total for each alternative. The total FTEs by alternative are presented in Table I-1. Because the duration of each activity varies, the sum of the FTEs per year for each activity under an alternative does not necessarily represent the actual number of FTEs required to accomplish the work for that alternative in any given year. That information is provided in Chapter 4, Sections 4.1.9, 4.2.9, 4.3.9, and 4.4.8. However, the numbers of FTEs per year presented in this appendix are useful for comparing the magnitude and complexity of workforce commitments between the alternatives. (Note that the total displayed in many of the tables may not equal the sum of the contributions due to rounding. Values are displayed in three-significant-digit format.)

**Table I-1. Total Full-Time Equivalents by Alternative**

Alternative	Total Hours	Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents	Offsite Full-Time Equivalents
Tank Closure 1	16,300,000	4,470,000	2,150	1,740	415
Tank Closure 2A	708,000,000	31,000,000	15,000	13,300	1,710
Tank Closure 2B	388,000,000	30,200,000	14,600	12,900	1,670
Tank Closure 3A	349,000,000	31,200,000	15,100	13,400	1,680
Tank Closure 3B	344,000,000	30,700,000	14,800	13,200	1,640
Tank Closure 3C	357,000,000	32,700,000	15,700	14,000	1,810
Tank Closure 4	450,000,000	36,800,000	17,800	15,400	2,350
Tank Closure 5	325,000,000	36,100,000	17,400	15,300	2,090
Tank Closure 6A, Base Case	2,060,000,000	42,900,000	20,700	17,900	2,810
Tank Closure 6A, Option Case	2,130,000,000	49,800,000	24,000	20,400	3,610
Tank Closure 6B, Base Case	515,000,000	39,200,000	19,000	16,500	2,460
Tank Closure 6B, Option Case	572,000,000	46,100,000	22,300	19,000	3,280
Tank Closure 6C	389,000,000	30,200,000	14,600	12,900	1,660
FFTF Decommissioning 1	41,600	416	1	1	0

**Table I-1. Total Full-Time Equivalents by Alternative (continued)**

Alternative	Total Hours	Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents	Offsite Full-Time Equivalents
FFTF Decommissioning 2, Facility Disposition	810,000	235,000	122	112	10
FFTF Decommissioning 2, Disposition of Bulk Sodium					
Hanford Reuse Option	579,000	320,000	158	127	31
Idaho Reuse Option	266,000	163,000	83	76	7
FFTF Decommissioning 2, Disposition of RH-SCs					
Hanford Option	468,000	297,000	144	113	31
Idaho Option	125,000	125,000	61	60	1
FFTF Decommissioning 3, Facility Disposition	951,000	273,000	139	132	7
FFTF Decommissioning 3, Disposition of Bulk Sodium					
Hanford Reuse Option	579,000	320,000	158	127	31
Idaho Reuse Option	266,000	163,000	83	76	7
FFTF Decommissioning 3, Disposition of RH-SCs					
Hanford Option	468,000	297,000	144	113	31
Idaho Option	125,000	125,000	61	60	1
Waste Management 1	1,010,000	262,000	129	110	19
Waste Management 2	37,900,000	2,490,000	1,210	1,100	107
Disposal Group 1	19,900,000	3,710,000	1,790	1,600	184
Disposal Group 2	128,000,000	14,600,000	7,020	6,330	690
Disposal Group 3	204,000,000	14,600,000	7,030	6,340	690
Waste Management 3	37,900,000	2,490,000	1,210	1,100	107
Disposal Group 1	21,400,000	4,240,000	2,050	1,870	185
Disposal Group 2	129,000,000	15,100,000	7,300	6,600	691
Disposal Group 3	205,000,000	15,100,000	7,300	6,610	691

**Note:** Total may not equal the sum of the contributions due to rounding.

**Key:** FFTF=Fast Flux Test Facility; RH-SCs=remote-handled special components.

The following sections present the detailed FTE estimates for each of the activities that would be conducted under each alternative.

## **I.2 ALTERNATIVES**

Construction, operations, deactivation, closure, and decommissioning (where appropriate) workforce estimate tables are presented for each of the alternatives in the following sections. In addition, all radiological workers were assumed to work on site.

## I.2.1 Tank Closure Alternative 1: No Action

Table I-2. Tank Closure Alternative 1 Construction Rollup Workforce Estimate

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	31,500	2006	2008	3	10,500	6	12
Nonradiological workers							
On site	37,100	2006	2008	3	12,400	6	
Off site	13,700	2006	2008	3	4,570	3	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	80,900	2006	2008	3	27,000	13	45
Nonradiological workers							
On site	198,000	2006	2008	3	66,000	32	
Off site	76,900	2006	2008	3	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	179,000	2006	2008	3	59,700	29	104
Nonradiological workers							
On site	467,000	2006	2008	3	156,000	75	
Off site	177,000	2006	2008	3	59,000	29	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						904
Nonradiological workers							
On site	5,650,000	2006	2008	3	1,880,000	904	
Off site	1,880,000	2006	2008	3	627,000	302	
<b>Total</b>	<b>8,790,000</b>				<b>2,930,000</b>	<b>1,410</b>	<b>1,070</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 340.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.

Table I-3. Tank Closure Alternative 1 Operations Rollup Workforce Estimate

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	780,000	2006	2008	3	260,000	125	650
Nonradiological workers							
On site	3,280,000	2006	2008	3	1,090,000	525	
Off site	465,000	2006	2008	3	155,000	75	
<b>Total</b>	<b>4,530,000</b>				<b>1,510,000</b>	<b>725</b>	<b>650</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 75.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Source:** Compiled from SAIC 2010a.

**Table I-4. Tank Closure Alternative 1 Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Administrative Controls (DEA_ADM)</b>							
Radiological workers	3,000,000	2008	2107	100	30,000	15	15
Nonradiological workers	N/A						
<b>Total</b>	<b>3,000,000</b>				<b>30,000</b>	<b>15</b>	<b>15</b>

**Notes and Assumptions:**

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**I.2.2 Tank Closure Alternative 2A: Existing Waste Treatment Plant Vitrification;  
No Closure**

**Table I-5. Tank Closure Alternative 2A Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	12
Nonradiological workers							
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						381
Nonradiological workers							
Onsite construction	748,000	2011	2013	3	249,000	120	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	1,760,000	2011	2013	3	587,000	283	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						223
Nonradiological workers							
Onsite construction	3,130,000	2014	2024	11	285,000	138	
Onsite exempt	1,930,000	2014	2024	11	175,000	85	
Offsite design	2,360,000	2014	2024	11	215,000	104	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	45
Nonradiological workers							
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	104
Nonradiological workers							
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	

Table I-5. Tank Closure Alternative 2A Construction Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						
Nonradiological workers							904
On site	22,600,000	2006	2017	12	1,880,000	904	
Off site	7,540,000	2006	2017	12	628,000	302	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						
Nonradiological workers							190
On site	1,580,000	2088	2091	4	395,000	190	
Off site	466,000	2088	2091	4	117,000	57	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	173,000	2013	2056	44	3,930	2	
Nonradiological workers							5
On site	233,000	2013	2056	44	5,300	3	
Off site	N/A						
<b>Modified Sluicing Retrieval System (CON_MS)</b>							
Radiological workers	4,910,000	2013	2092	80	61,400	30	
Nonradiological workers							77
On site	7,760,000	2013	2092	80	97,000	47	
Off site	2,730,000	2013	2092	80	34,100	17	
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	8,100,000	2013	2052	40	203,000	98	
Nonradiological workers							206
On site	8,940,000	2013	2052	40	224,000	108	
Off site	4,790,000	2013	2052	40	120,000	58	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	9,690,000	2053	2092	40	242,000	117	
Nonradiological workers							242
On site	10,300,000	2053	2092	40	258,000	125	
Off site	5,900,000	2053	2092	40	148,000	72	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)<sup>a</sup></b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	8,420	2015	2066	6	1,400	1	
Off site	N/A						

**Table I-5. Tank Closure Alternative 2A Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Double-Shell Tank Replacements (CON_DST)</b>							
Radiological workers	N/A						
Nonradiological workers							144
On site	12,500,000	2013	2054	42	298,000	144	
Off site	4,510,000	2013	2054	42	107,000	52	
<b>Waste Treatment Plant Replacement (CON_WTPU)</b>							
Radiological workers	N/A						
Nonradiological workers							1,360
On site	33,800,000	2065	2076	12	2,820,000	1,360	
Off site	11,200,000	2065	2076	12	933,000	449	
<b>Underground Transfer Line Replacement (CON_UTLU)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	126,000	2044	2044	1	126,000	61	
Off site	17,400	2044	2044	1	17,400	9	
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							329
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	
<b>Effluent Treatment Facility Replacement (CON ETFU)</b>							
Radiological workers	N/A						
Nonradiological workers							329
On site	2,050,000	2053	2055	3	683,000	329	
Off site	704,000	2053	2055	3	235,000	113	
<b>242-A Evaporator Replacement (CON_EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							102
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>242-A Evaporator Replacement (CON_EVAU)<sup>b</sup></b>							
Radiological workers	N/A						
Nonradiological workers							102
On site	1,270,000	2040	2067	6	212,000	102	
Off site	441,000	2040	2067	6	73,500	36	
<b>Total</b>	<b>186,000,000</b>				<b>13,400,000</b>	<b>6,470</b>	<b>4,880</b>

<sup>a</sup> High-Level Radioactive Waste Melter Interim Storage Facilities construction activities would occur over three 2-year periods.  
 Period 1, 2015–2016  
 Period 2, 2040–2041  
 Period 3, 2065–2066

<sup>b</sup> Replacement 242-A Evaporator construction activities would occur over two 3-year periods.  
 Period 1, 2040–2042  
 Period 2, 2065–2067

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,590.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

For Waste Treatment Plant operations, no allowance was made for full-time equivalents in ramp-up years.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

Table I-6. Tank Closure Alternative 2A Operations Rollup Workforce Estimate

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	12,100,000	2018	2093	76	159,000	77	120
Nonradiological workers							
On site	6,750,000	2018	2093	76	88,800	43	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	103,000	2006	2092	87	1,180	1	4
Nonradiological workers							
On site	377,000	2006	2092	87	4,330	3	
Off site	269,000	2006	2092	87	3,090	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	22,600,000	2006	2092	87	260,000	125	650
Nonradiological workers							
On site	95,100,000	2006	2092	87	1,090,000	525	
Off site	13,500,000	2006	2092	87	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	29,700	2006	2092	87	341	1	28
Nonradiological workers							
On site	4,830,000	2006	2092	87	55,500	27	
Off site	37,600	2006	2092	87	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	3,190,000	2006	2092	87	36,700	18	44
Nonradiological workers							
On site	4,570,000	2006	2092	87	52,500	26	
Off site	5,050,000	2006	2092	87	58,000	28	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	157,000,000	2018	2092	75	2,090,000	1,010	1,700
Nonradiological workers							
On site	107,000,000	2018	2092	75	1,430,000	688	
Off site	15,800	2018	2092	75	211	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,090,000	2093	2093	1	2,090,000	1,010	1,700
Nonradiological workers							
On site	1,430,000	2093	2093	1	1,430,000	688	
Off site	211	2093	2093	1	211	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2092	2093	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I-6. Tank Closure Alternative 2A Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Modified Sluicing Retrieval System (OPS_MS)</b>							
Radiological workers	7,380,000	2013	2092	80	92,300	45	75
Nonradiological workers							
On site	4,830,000	2013	2092	80	60,400	30	
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	5,170,000	2013	2052	40	129,000	63	120
Nonradiological workers							
On site	4,680,000	2013	2052	40	117,000	57	
Off site	N/A						
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	6,630,000	2053	2092	40	166,000	80	153
Nonradiological workers							
On site	6,000,000	2053	2092	40	150,000	73	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2192	175	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	13,900,000	2006	2095	90	154,000	75	94
Nonradiological workers							
On site	3,480,000	2006	2095	90	38,700	19	
Off site	N/A						
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	4,300,000	2006	2093	88	48,900	24	32
Nonradiological workers							
On site	1,320,000	2006	2093	88	15,000	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						43
Nonradiological workers							
On site	8,670,000	2006	2102	97	89,400	43	
Off site	N/A						
<b>Total</b>	<b>503,000,000</b>				<b>10,100,000</b>	<b>4,890</b>	<b>4,790</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 110.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

Table I-7. Tank Closure Alternative 2A Deactivation Rollup Workforce Estimate

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	160	2094	2094	1	160	1	
Off site	N/A						
<b>Administrative Controls (DEA_ADM)</b>							
Radiological workers	3,000,000	2094	2193	100	30,000	15	
Nonradiological workers							15
On site	N/A						
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	4,190,000	2078	2079	2	2,100,000	1,010	
Nonradiological workers							1,700
On site	2,880,000	2078	2079	2	1,440,000	693	
Off site	N/A	2078	2079	2			
<b>Waste Treatment Plant Upgrades (DEA_WTPU)</b>							
Radiological workers	4,190,000	2094	2095	2	2,100,000	1,010	
Nonradiological workers							1,700
On site	2,880,000	2094	2095	2	1,440,000	693	
Off site	N/A	2094	2095	2	N/A		
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2094	2094	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility (Original) (DEA_ETFO)</b>							
Radiological workers	77,300	2026	2026	1	77,300	38	
Nonradiological workers							48
On site	19,300	2026	2026	1	19,300	10	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)</b>							
Radiological workers	77,300	2056	2056	1	77,300	38	
Nonradiological workers							48
On site	19,300	2056	2056	1	19,300	10	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETFU)</b>							
Radiological workers	77,300	2096	2096	1	77,300	38	
Nonradiological workers							48
On site	19,300	2096	2096	1	19,300	10	
Off site	N/A						

**Table I-7. Tank Closure Alternative 2A Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	16
Nonradiological workers							
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						
<b>Modified Sluicing Retrieval System (DEA_MS)</b>							
Radiological workers	372,000	2013	2092	80	4,650	3	3
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	680,000	2013	2052	40	17,000	9	9
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	223,000	2053	2092	40	5,580	3	3
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVAU)<sup>a</sup></b>							
Radiological workers	73,300	2043	2094	3	24,400	12	16
Nonradiological workers							
On site	22,400	2043	2094	3	7,470	4	
Off site	N/A						
<b>Total</b>	<b>18,900,000</b>				<b>7,510,000</b>	<b>3,630</b>	<b>3,620</b>

<sup>a</sup> Replacement 242-A Evaporator deactivation activities would occur over three 1-year periods.  
 Period 1, 2043–2043  
 Period 2, 2068–2068  
 Period 3, 2094–2094

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 10.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I–8. Tank Closure Alternative 2A Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	
Nonradiological workers							9
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Total</b>	<b>270,000</b>				<b>24,600</b>	<b>13</b>	<b>9</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 4.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Source:** Compiled from SAIC 2010a.**I.2.3 Tank Closure Alternative 2B: Expanded WTP Vitrification; Landfill Closure****Table I–9. Tank Closure Alternative 2B Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	
Nonradiological workers							12
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	283	381
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						
Nonradiological workers							
Onsite construction	3,120,000	2014	2024	11	284,000	137	222
Onsite exempt	1,930,000	2014	2024	11	175,000	85	
Offsite design	2,360,000	2014	2024	11	215,000	104	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	
Nonradiological workers							45
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	

**Table I-9. Tank Closure Alternative 2B Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	104
Nonradiological workers							
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						61
Nonradiological workers							
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						1,190
Nonradiological workers							
On site	29,700,000	2006	2017	12	2,480,000	1,190	
Off site	9,930,000	2006	2017	12	828,000	399	
<b>Additional Low-Activity Waste Melters (CON_LAW)</b>							
Radiological workers	N/A						340
Nonradiological workers							
On site	7,060,000	2008	2017	10	706,000	340	
Off site	2,390,000	2008	2017	10	239,000	115	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						190
Nonradiological workers							
On site	1,580,000	2035	2038	4	395,000	190	
Off site	466,000	2035	2038	4	117,000	57	
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						454
Nonradiological workers							
On site	4,720,000	2013	2017	5	944,000	454	
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	173,000	2013	2016	4	43,300	21	50
Nonradiological workers							
On site	233,000	2013	2016	4	58,300	29	
Off site	N/A						
<b>Modified Sluicing Retrieval System (CON_MS)</b>							
Radiological workers	3,850,000	2013	2043	31	124,000	60	155
Nonradiological workers							
On site	6,080,000	2013	2043	31	196,000	95	
Off site	2,140,000	2013	2043	31	69,000	34	

**Table I-9. Tank Closure Alternative 2B Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	8,100,000	2013	2028	16	506,000	244	513
Nonradiological workers							
On site	8,940,000	2013	2028	16	559,000	269	
Off site	4,790,000	2013	2028	16	299,000	144	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2029	2043	15	747,000	360	745
Nonradiological workers							
On site	12,000,000	2029	2043	15	800,000	385	
Off site	6,820,000	2029	2043	15	455,000	219	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)<sup>a</sup></b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	5,620	2015	2030	4	1,410	1	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						329
Nonradiological workers							
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	
<b>242-A Evaporator Replacement (CON_EVA)</b>							
Radiological workers	N/A						102
Nonradiological workers							
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>Total</b>	<b>145,000,000</b>				<b>13,400,000</b>	<b>6,450</b>	<b>4,890</b>

<sup>a</sup> High-Level Radioactive Waste Melter Interim Storage Facilities construction activities would occur over two 2-year periods.  
 Period 1, 2015–2016  
 Period 2, 2029–2030

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,560.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-10. Tank Closure Alternative 2B Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	3,650,000	2018	2040	23	159,000	77	120
Nonradiological workers							
On site	2,040,000	2018	2040	23	88,800	43	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	44,900	2006	2043	38	1,180	1	4
Nonradiological workers							
On site	165,000	2006	2043	38	4,340	3	
Off site	117,000	2006	2043	38	3,080	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	9,880,000	2006	2043	38	260,000	125	650
Nonradiological workers							
On site	41,500,000	2006	2043	38	1,090,000	525	
Off site	5,890,000	2006	2043	38	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	13,000	2006	2043	38	342	1	28
Nonradiological workers							
On site	2,110,000	2006	2043	38	55,500	27	
Off site	16,400	2006	2043	38	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,390,000	2006	2043	38	36,600	18	44
Nonradiological workers							
On site	2,000,000	2006	2043	38	52,600	26	
Off site	2,200,000	2006	2043	38	57,900	28	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	62,800,000	2018	2043	26	2,420,000	1,160	1,940
Nonradiological workers							
On site	42,100,000	2018	2043	26	1,620,000	779	
Off site	8,000	2018	2043	26	308	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,410,000	2040	2040	1	2,410,000	1,160	1,940
Nonradiological workers							
On site	1,620,000	2040	2040	1	1,620,000	779	
Off site	308	2040	2040	1	308	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2039	2040	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I-10. Tank Closure Alternative 2B Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Modified Sluicing Retrieval System (OPS_MS)</b>							
Radiological workers	5,780,000	2013	2043	31	186,000	90	149
Nonradiological workers							
On site	3,780,000	2013	2043	31	122,000	59	
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	5,170,000	2013	2028	16	323,000	156	297
Nonradiological workers							
On site	4,680,000	2013	2028	16	293,000	141	
Off site	N/A						
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2029	2043	15	511,000	246	469
Nonradiological workers							
On site	6,940,000	2029	2043	15	463,000	223	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2145	28	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	6,180,000	2006	2045	40	155,000	75	94
Nonradiological workers							
On site	1,550,000	2006	2045	40	38,800	19	
Off site	N/A						
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,860,000	2006	2043	38	48,900	24	32
Nonradiological workers							
On site	568,000	2006	2043	38	14,900	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						43
Nonradiological workers							
On site	4,200,000	2006	2052	47	89,400	43	
Off site	N/A						
<b>Total</b>	<b>228,000,000</b>				<b>12,300,000</b>	<b>5,940</b>	<b>5,840</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 100.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.

**Table I-11. Tank Closure Alternative 2B Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	160	2041	2041	1	160	1	
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	3,800,000	2044	2045	2	1,900,000	914	
Nonradiological workers							1,530
On site	2,550,000	2044	2045	2	1,280,000	616	
Off site	500	2044	2045	2	250	1	
<b>Modified Sluicing Retrieval System (DEA_MS)</b>							
Radiological workers	291,000	2013	2043	31	9,390	5	
Nonradiological workers							5
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	680,000	2013	2028	16	42,500	21	
Nonradiological workers							21
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2029	2043	15	17,200	9	
Nonradiological workers							9
On site	N/A						
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2041	2041	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility (Original) (DEA_ETFO)</b>							
Radiological workers	77,300	2026	2026	1	77,300	38	
Nonradiological workers							48
On site	19,300	2026	2026	1	19,300	10	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)</b>							
Radiological workers	77,300	2046	2046	1	77,300	38	
Nonradiological workers							48
On site	19,300	2046	2046	1	19,300	10	
Off site (original)	N/A						

**Table I-11. Tank Closure Alternative 2B Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	16
Nonradiological workers							
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2044	2044	1	24,400	12	16
Nonradiological workers							
On site	7,480	2044	2044	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>7,860,000</b>				<b>3,530,000</b>	<b>1,710</b>	<b>1,710</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I-12. Tank Closure Alternative 2B Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Tank-Filling Grout Facility Construction (CLO_CONGRO)</b>							
Radiological workers	480	2032	2033	2	240	1	5
Nonradiological workers							
On site	13,400	2032	2033	2	6,700	4	
Off site	4,160	2032	2033	2	2,080	1	
<b>Tank-Filling Grout Facility Operations (CLO_OPSGRO)</b>							
Radiological workers	68,000	2034	2043	10	6,800	4	13
Nonradiological workers							
On site	185,000	2034	2043	10	18,500	9	
Off site	130,000	2034	2043	10	13,000	7	
<b>Tank-Filling Grout Facility Deactivation (CLO_DEAGRO)</b>							
Radiological workers	480	2044	2044	1	480	1	4
Nonradiological workers							
On site	4,320	2044	2044	1	4,320	3	
Off site	1,040	2044	2044	1	1,040	1	
<b>Ancillary Equipment Grouting (CLO_ANCFIL)</b>							
Radiological workers	338,000	2013	2037	25	13,500	7	7
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I-12. Tank Closure Alternative 2B Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Ancillary Equipment Removal (CLO_ANCREM)</b>							
Radiological workers	166,000	2032	2037	6	27,700	14	14
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>BX and SX Tank Farm Soil Removal (CLO_SOIL)</b>							
Radiological workers	33,000	2032	2037	6	5,500	3	6
Nonradiological workers							
On site	30,000	2032	2037	6	5,000	3	
Off site	N/A						
<b>Containment Structure Construction (CLO_CONCS)</b>							
Radiological workers	2,000	2028	2031	4	500	1	4
Nonradiological workers							
On site	20,000	2028	2031	4	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS)</b>							
Radiological workers	2,000	2038	2040	3	667	1	5
Nonradiological workers							
On site	20,000	2038	2040	3	6,670	4	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier Construction (CLO_RCRA)</b>							
Radiological workers	1,430,000	2039	2045	7	204,000	99	394
Nonradiological workers							
On site	4,290,000	2039	2045	7	613,000	295	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	9
Nonradiological workers							
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						3
Nonradiological workers							
On site	471,000	2046	2145	100	4,710	3	
Off site	N/A						
<b>Total</b>	<b>7,480,000</b>				<b>964,000</b>	<b>477</b>	<b>464</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 13.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

## I.2.4 Tank Closure Alternative 3A: Existing WTP Vitrification with Thermal Supplemental Treatment (Bulk Vitrification); Landfill Closure

**Table I-13. Tank Closure Alternative 3A Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	12
Nonradiological workers							
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						381
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	283	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						231
Nonradiological workers							
Onsite construction	1,780,000	2014	2019	6	297,000	143	
Onsite exempt	1,100,000	2014	2019	6	183,000	88	
Offsite design	1,350,000	2014	2019	6	225,000	109	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	45
Nonradiological workers							
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	104
Nonradiological workers							
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						61
Nonradiological workers							
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						904
Nonradiological workers							
On site	22,600,000	2006	2017	12	1,880,000	904	
Off site	7,540,000	2006	2017	12	628,000	302	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						190
Nonradiological workers							
On site	1,580,000	2035	2038	4	395,000	190	
Off site	466,000	2035	2038	4	117,000	57	

**Table I-13. Tank Closure Alternative 3A Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						
Nonradiological workers							454
On site	4,720,000	2013	2017	5	944,000	454	
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	173,000	2013	2016	4	43,300	21	
Nonradiological workers							50
On site	233,000	2013	2016	4	58,300	29	
Off site	N/A						
<b>Modified Sluicing Retrieval System (CON_MS)</b>							
Radiological workers	3,850,000	2013	2039	27	143,000	69	
Nonradiological workers							178
On site	6,080,000	2013	2039	27	225,000	109	
Off site	2,140,000	2013	2039	27	79,300	39	
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	8,100,000	2013	2026	14	579,000	279	
Nonradiological workers							587
On site	8,940,000	2013	2026	14	639,000	308	
Off site	4,790,000	2013	2026	14	342,000	165	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2027	2039	13	862,000	415	
Nonradiological workers							859
On site	12,000,000	2027	2039	13	923,000	444	
Off site	6,820,000	2027	2039	13	525,000	253	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	2,810	2015	2016	2	1,410	1	
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (CON_CH)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	125,000	2008	2008	1	125,000	61	
Off site	42,100	2008	2008	1	42,100	21	
<b>Remote-Handled Mixed Transuranic Waste Facility (CON_RH)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	154,000	2013	2014	2	77,000	38	
Off site	51,900	2013	2014	2	26,000	13	
<b>Transuranic Waste Interim Storage Facility (CON_TRU)</b>							
Radiological workers	N/A						
Nonradiological workers							4
On site	16,400	2008	2009	2	8,200	4	
Off site	N/A						

**Table I-13. Tank Closure Alternative 3A Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Bulk Vitrification Facility (200-West Area) (CON_BVW)</b>							
Radiological workers	N/A						
Nonradiological workers							165
On site	684,000	2016	2017	2	342,000	165	
Off site	231,000	2016	2017	2	116,000	56	
<b>Solid-Liquid Separations Facility (200-West Area) (CON_SEPW)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	156,000	2016	2017	2	78,000	38	
Off site	52,800	2016	2017	2	26,400	13	
<b>Bulk Vitrification Facility (200-East Area) (CON_BVE)</b>							
Radiological workers	N/A						
Nonradiological workers							165
On site	684,000	2016	2017	2	342,000	165	
Off site	231,000	2016	2017	2	116,000	56	
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							329
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	
<b>242-A Evaporator Replacement (CON_EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							102
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>Total</b>	<b>126,000,000</b>				<b>13,500,000</b>	<b>6,530</b>	<b>4,960</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,570.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I-14. Tank Closure Alternative 3A Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	3,650,000	2018	2040	23	159,000	77	
Nonradiological workers							120
On site	2,040,000	2018	2040	23	88,700	43	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	40,200	2006	2039	34	1,180	1	
Nonradiological workers							4
On site	147,000	2006	2039	34	4,320	3	
Off site	105,000	2006	2039	34	3,090	2	

**Table I-14. Tank Closure Alternative 3A Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	8,840,000	2006	2039	34	260,000	125	650
Nonradiological workers							
On site	37,200,000	2006	2039	34	1,090,000	525	
Off site	5,270,000	2006	2039	34	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	11,600	2006	2039	34	341	1	28
Nonradiological workers							
On site	1,890,000	2006	2039	34	55,600	27	
Off site	14,700	2006	2039	34	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,250,000	2006	2039	34	36,800	18	44
Nonradiological workers							
On site	1,790,000	2006	2039	34	52,600	26	
Off site	1,970,000	2006	2039	34	57,900	28	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	46,100,000	2018	2039	22	2,100,000	1,010	1,700
Nonradiological workers							
On site	31,500,000	2018	2039	22	1,430,000	688	
Off site	4,620	2018	2039	22	210	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,100,000	2040	2040	1	2,100,000	1,010	1,700
Nonradiological workers							
On site	1,430,000	2040	2040	1	1,430,000	688	
Off site	210	2040	2040	1	210	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2039	2040	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Modified Sluicing Retrieval System (OPS_MS)</b>							
Radiological workers	5,780,000	2013	2039	27	214,000	103	171
Nonradiological workers							
On site	3,780,000	2013	2039	27	140,000	68	
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	5,170,000	2013	2026	14	369,000	178	339
Nonradiological workers							
On site	4,680,000	2013	2026	14	334,000	161	
Off site	N/A						
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2027	2039	13	590,000	284	541
Nonradiological workers							
On site	6,940,000	2027	2039	13	534,000	257	
Off site	N/A						

Table I-14. Tank Closure Alternative 3A Operations Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2141	124	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (OPS_CH)</b>							
Radiological workers	200,000	2009	2010	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (OPS_RH)</b>							
Radiological workers	1,000,000	2015	2019	5	200,000	97	97
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (OPS_TRU)</b>							
Radiological workers	N/A	2009	2034	26	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Bulk Vitrification Facility (200-West Area) (OPS_BVW)</b>							
Radiological workers	3,400,000	2018	2039	22	155,000	75	94
Nonradiological workers							
On site	828,000	2018	2039	22	37,600	19	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (OPS_SEPW)</b>							
Radiological workers	2,800,000	2018	2039	22	127,000	62	81
Nonradiological workers							
On site	850,000	2018	2039	22	38,600	19	
Off site	N/A						
<b>Bulk Vitrification Facility (200-East Area) (OPS_BVE)</b>							
Radiological workers	2,810,000	2018	2039	22	128,000	62	77
Nonradiological workers							
On site	684,000	2018	2039	22	31,100	15	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	5,720,000	2006	2042	37	155,000	75	94
Nonradiological workers							
On site	1,430,000	2006	2042	37	38,600	19	
Off site	N/A						
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,710,000	2006	2040	35	48,900	24	32
Nonradiological workers							
On site	523,000	2006	2040	35	14,900	8	
Off site	N/A						

**Table I-14. Tank Closure Alternative 3A Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	4,200,000	2006	2052	47	89,400	43	43
Off site	N/A						
<b>Total</b>	<b>206,000,000</b>				<b>12,400,000</b>	<b>5,990</b>	<b>5,890</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 100.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

For Waste Treatment Plant operations, no allowance was made for full-time equivalents in ramp-up years.

For 200-East and 200-West Area Bulk Vitrification Facility operations, no allowance was made for full-time equivalents in ramp-up years.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-15. Tank Closure Alternative 3A Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	160	2041	2041	1	160	1	1
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	4,190,000	2041	2042	2	2,100,000	1,010	
Nonradiological workers							
On site	2,880,000	2041	2042	2	1,440,000	693	1,700
Off site	N/A						
<b>Modified Sluicing Retrieval System (DEA_MS)</b>							
Radiological workers	291,000	2013	2039	27	10,800	6	
Nonradiological workers							
On site	N/A						6
Off site	N/A						
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	680,000	2013	2026	14	48,600	24	
Nonradiological workers							
On site	N/A						24
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2027	2039	13	19,800	10	
Nonradiological workers							
On site	N/A						10
Off site	N/A						

Table I-15. Tank Closure Alternative 3A Deactivation Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2041	2041	1	23,900	12	12
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (DEA_CH)</b>							
Radiological workers	100,000	2011	2012	2	50,000	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (DEA_RH)</b>							
Radiological workers	200,000	2020	2021	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (DEA_TRU)</b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	80	2035	2035	1	80	1	
Off site	N/A						
<b>Bulk Vitrification Facility (200-West Area) (DEA_BVW)</b>							
Radiological workers	148,000	2040	2041	2	74,000	36	45
Nonradiological workers							
On site	36,000	2040	2041	2	18,000	9	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (DEA_SEPW)</b>							
Radiological workers	122,000	2040	2041	2	61,000	30	39
Nonradiological workers							
On site	37,000	2040	2041	2	18,500	9	
Off site	N/A						
<b>Bulk Vitrification Facility (200-East Area) (DEA_BVE)</b>							
Radiological workers	148,000	2040	2041	2	74,000	36	45
Nonradiological workers							
On site	36,000	2040	2041	2	18,000	9	
Off site	N/A						
<b>Effluent Treatment Facility (Original) (DEA_ETFO)</b>							
Radiological workers	77,300	2026	2026	1	77,300	38	48
Nonradiological workers							
On site	19,300	2026	2026	1	19,300	10	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)</b>							
Radiological workers	77,300	2043	2043	1	77,300	38	48
Nonradiological workers							
On site	19,300	2043	2043	1	19,300	10	
Off site	N/A						

**Table I-15. Tank Closure Alternative 3A Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	16
Nonradiological workers							
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2041	2041	1	24,400	12	16
Nonradiological workers							
On site	7,480	2041	2041	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>9,410,000</b>				<b>4,310,000</b>	<b>2,090</b>	<b>2,090</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-16. Tank Closure Alternative 3A Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Tank-Filling Grout Facility Construction (CLO_CONGRO)</b>							
Radiological workers	480	2028	2029	2	240	1	5
Nonradiological workers							
On site	13,400	2028	2029	2	6,700	4	
Off site	4,160	2028	2029	2	2,080	1	
<b>Tank-Filling Grout Facility Operations (CLO_OPSGRO)</b>							
Radiological workers	68,000	2030	2039	10	6,800	4	13
Nonradiological workers							
On site	185,000	2030	2039	10	18,500	9	
Off site	130,000	2030	2039	10	13,000	7	
<b>Tank-Filling Grout Facility Deactivation (CLO_DEAGRO)</b>							
Radiological workers	480	2040	2040	1	480	1	4
Nonradiological workers							
On site	4,320	2040	2040	1	4,320	3	
Off site	1,040	2040	2040	1	1,040	1	
<b>Ancillary Equipment Grouting (CLO_ANCFIL)</b>							
Radiological workers	338,000	2012	2032	21	16,100	8	8
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Ancillary Equipment Removal (CLO_ANCREM)</b>							
Radiological workers	166,000	2028	2033	6	27,700	14	14
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I-16. Tank Closure Alternative 3A Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>BX and SX Tank Farm Soil Removal (CLO_SOIL)</b>							
Radiological workers	33,000	2028	2033	6	5,500	3	
Nonradiological workers							6
On site	30,000	2028	2033	6	5,000	3	
Off site	N/A						
<b>Containment Structure Construction (CLO_CONCS)</b>							
Radiological workers	2,000	2024	2027	4	500	1	
Nonradiological workers							4
On site	20,000	2024	2027	4	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS)</b>							
Radiological workers	2,000	2034	2036	3	667	1	
Nonradiological workers							5
On site	20,000	2034	2036	3	6,670	4	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier Construction (CLO_RCRA)</b>							
Radiological workers	1,430,000	2035	2041	7	204,000	99	
Nonradiological workers							394
On site	4,290,000	2035	2041	7	613,000	295	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	
Nonradiological workers							9
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						
Nonradiological workers							3
On site	471,000	2042	2141	100	4,710	3	
Off site	N/A						
<b>Total</b>	<b>7,480,000</b>				<b>967,000</b>	<b>478</b>	<b>465</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 13.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.

**I.2.5 Tank Closure Alternative 3B: Existing WTP Vitrification with Nonthermal Supplemental Treatment (Cast Stone); Landfill Closure**

**Table I-17. Tank Closure Alternative 3B Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	12
Nonradiological workers							
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						381
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	283	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						231
Nonradiological workers							
Onsite construction	1,780,000	2014	2019	6	297,000	143	
Onsite exempt	1,100,000	2014	2019	6	183,000	88	
Offsite design	1,350,000	2014	2019	6	225,000	109	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	45
Nonradiological workers							
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	104
Nonradiological workers							
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						61
Nonradiological workers							
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						904
Nonradiological workers							
On site	22,600,000	2006	2017	12	1,880,000	904	
Off site	7,540,000	2006	2017	12	628,000	302	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						190
Nonradiological workers							
On site	1,580,000	2035	2038	4	395,000	190	
Off site	466,000	2035	2038	4	117,000	57	

Table I-17. Tank Closure Alternative 3B Construction Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						
Nonradiological workers							454
On site	4,720,000	2013	2017	5	944,000	454	
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	173,000	2013	2016	4	43,300	21	
Nonradiological workers							50
On site	233,000	2013	2016	4	58,300	29	
Off site	N/A						
<b>Modified Sluicing Retrieval System (CON_MS)</b>							
Radiological workers	3,850,000	2013	2039	27	143,000	69	
Nonradiological workers							178
On site	6,080,000	2013	2039	27	225,000	109	
Off site	2,140,000	2013	2039	27	79,300	39	
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	8,100,000	2013	2026	14	579,000	279	
Nonradiological workers							587
On site	8,940,000	2013	2026	14	639,000	308	
Off site	4,790,000	2013	2026	14	342,000	165	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2027	2039	13	862,000	415	
Nonradiological workers							859
On site	12,000,000	2027	2039	13	923,000	444	
Off site	6,820,000	2027	2039	13	525,000	253	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	2,810	2015	2016	2	1,410	1	
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (CON_CH)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	125,000	2008	2008	1	125,000	61	
Off site	42,100	2008	2008	1	42,100	21	
<b>Remote-Handled Mixed Transuranic Waste Facility (CON_RH)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	154,000	2013	2014	2	77,000	38	
Off site	51,900	2013	2014	2	26,000	13	
<b>Transuranic Waste Interim Storage Facility (CON_TRU)</b>							
Radiological workers	N/A						
Nonradiological workers							4
On site	16,400	2008	2009	2	8,200	4	
Off site	N/A						

**Table I-17. Tank Closure Alternative 3B Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Cast Stone Facility (200-West Area) (CON_CGW)</b>							
Radiological workers	N/A						
Nonradiological workers							113
On site	467,000	2016	2017	2	234,000	113	
Off site	158,000	2016	2017	2	79,000	38	
<b>Solid-Liquid Separations Facility (200-West Area) (CON_SEPW)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	156,000	2016	2017	2	78,000	38	
Off site	52,800	2016	2017	2	26,400	13	
<b>Cast Stone Facility (200-East Area) (CON_CGE)</b>							
Radiological workers	N/A						
Nonradiological workers							113
On site	467,000	2016	2017	2	234,000	113	
Off site	158,000	2015	2016	2	79,000	38	
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							329
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	
<b>242-A Evaporator Replacement (CON EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							102
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>Total</b>	<b>125,000,000</b>				<b>13,200,000</b>	<b>6,390</b>	<b>4,860</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,530.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-18. Tank Closure Alternative 3B Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	3,660,000	2018	2040	23	159,000	77	
Nonradiological workers							120
On site	2,040,000	2018	2040	23	88,800	43	
Off site	N/A						

Table I–18. Tank Closure Alternative 3B Operations Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	40,200	2006	2039	34	1,180	1	4
Nonradiological workers							
On site	147,000	2006	2039	34	4,330	3	
Off site	105,000	2006	2039	34	3,090	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	8,840,000	2006	2039	34	260,000	125	651
Nonradiological workers							
On site	37,200,000	2006	2039	34	1,090,000	526	
Off site	5,270,000	2006	2039	34	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	11,600	2006	2039	34	341	1	28
Nonradiological workers							
On site	1,890,000	2006	2039	34	55,600	27	
Off site	14,700	2006	2039	34	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,250,000	2006	2039	34	36,700	18	44
Nonradiological workers							
On site	1,790,000	2006	2039	34	52,500	26	
Off site	1,970,000	2006	2039	34	58,000	28	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	46,100,000	2018	2039	22	2,100,000	1,010	1,700
Nonradiological workers							
On site	31,500,000	2018	2039	22	1,430,000	689	
Off site	4,620	2018	2039	22	210	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,100,000	2040	2040	1	2,100,000	1,010	1,700
Nonradiological workers							
On site	1,430,000	2040	2040	1	1,430,000	689	
Off site	210	2040	2040	1	210	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2039	2040	2	51,700	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Modified Sluicing Retrieval System (OPS_MS)</b>							
Radiological workers	5,780,000	2013	2039	27	214,000	103	171
Nonradiological workers							
On site	3,780,000	2013	2039	27	140,000	68	
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	5,170,000	2013	2026	14	369,000	178	339
Nonradiological workers							
On site	4,680,000	2013	2026	14	334,000	161	
Off site	N/A						

**Table I-18. Tank Closure Alternative 3B Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2027	2039	13	590,000	284	541
Nonradiological workers							
On site	6,940,000	2027	2039	13	534,000	257	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2141	124			0
Nonradiological workers					N/A	0	
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (OPS_CH)</b>							
Radiological workers	200,000	2009	2010	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (OPS_RH)</b>							
Radiological workers	1,000,000	2015	2019	5	200,000	97	97
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (OPS_TRU)</b>							
Radiological workers	N/A	2009	2034	26			0
Nonradiological workers					N/A	0	
On site	N/A						
Off site	N/A						
<b>Cast Stone Facility (200-West Area) (OPS_CGW)</b>							
Radiological workers	1,100,000	2018	2039	22	50,200	25	53
Nonradiological workers							
On site	1,240,000	2018	2039	22	56,500	28	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (OPS_SEPW)</b>							
Radiological workers	2,800,000	2018	2039	22	127,000	62	81
Nonradiological workers							
On site	850,000	2018	2039	22	38,600	19	
Off site	N/A						
<b>Cast Stone Facility (200-East Area) (OPS_CGE)</b>							
Radiological workers	912,000	2018	2039	22	41,500	20	43
Nonradiological workers							
On site	1,030,000	2018	2039	22	46,600	23	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	5,720,000	2006	2042	37	155,000	75	94
Nonradiological workers							
On site	1,430,000	2006	2042	37	38,600	19	
Off site	N/A						

**Table I–18. Tank Closure Alternative 3B Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,710,000	2006	2040	35	48,900	24	32
Nonradiological workers							
On site	523,000	2006	2040	35	15,000	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						43
Nonradiological workers							
On site	4,200,000	2006	2052	47	89,400	43	
Off site	N/A						
<b>Total</b>	<b>202,000,000</b>				<b>12,300,000</b>	<b>5,920</b>	<b>5,820</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 100.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

For Waste Treatment Plant operations, no allowance was made for full-time equivalents in ramp-up years.

For 200-East and 200-West Area Bulk Vitrification Facility operations, no allowance was made for full-time equivalents in ramp-up years.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I–19. Tank Closure Alternative 3B Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	160	2041	2041	1	160	1	
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	4,190,000	2041	2042	2	2,100,000	1,010	1,700
Nonradiological workers							
On site	2,880,000	2041	2042	2	1,440,000	693	
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2041	2041	1	23,900	12	12
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Modified Sluicing Retrieval System (DEA_MS)</b>							
Radiological workers	291,000	2013	2039	27	10,800	6	6
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I-19. Tank Closure Alternative 3B Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	680,000	2013	2026	14	48,600	24	24
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2027	2039	13	19,800	10	10
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (DEA_CH)</b>							
Radiological workers	100,000	2011	2012	2	50,000	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (DEA_RH)</b>							
Radiological workers	200,000	2020	2021	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (DEA_TRU)</b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	80	2035	2035	1	80	1	
Off site	N/A						
<b>Cast Stone Facility (200-West Area) (DEA_CGW)</b>							
Radiological workers	48,000	2040	2041	2	24,000	12	25
Nonradiological workers							
On site	54,000	2040	2041	2	27,000	13	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (DEA_SEPW)</b>							
Radiological workers	122,000	2040	2041	2	61,000	30	39
Nonradiological workers							
On site	37,000	2040	2041	2	18,500	9	
Off site	N/A						
<b>Cast Stone Facility (200-East Area) (DEA_CGE)</b>							
Radiological workers	48,000	2040	2041	2	24,000	12	25
Nonradiological workers							
On site	54,000	2040	2041	2	27,000	13	
Off site	N/A						
<b>Effluent Treatment Facility (Original) (DEA_ETFO)</b>							
Radiological workers	77,300	2026	2026	1	77,300	38	48
Nonradiological workers							
On site	19,300	2026	2026	1	19,300	10	
Off site	N/A						

**Table I–19. Tank Closure Alternative 3B Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Effluent Treatment Facility Replacement (DEA_ETF)</b>							
Radiological workers	77,300	2043	2043	1	77,300	38	
Nonradiological workers							48
On site	19,300	2043	2043	1	19,300	10	
Off site	N/A						
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	
Nonradiological workers							16
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2041	2041	1	24,400	12	
Nonradiological workers							16
On site	7,480	2041	2041	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>9,240,000</b>				<b>4,230,000</b>	<b>2,050</b>	<b>2,050</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I–20. Tank Closure Alternative 3B Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Tank-Filling Grout Facility Construction (CLO_CONGRO)</b>							
Radiological workers	480	2028	2029	2	240	1	
Nonradiological workers							5
On site	13,400	2028	2029	2	6,700	4	
Off site	4,160	2028	2029	2	2,080	1	
<b>Tank-Filling Grout Facility Operations (CLO_OPSGRO)</b>							
Radiological workers	68,000	2030	2039	10	6,800	4	
Nonradiological workers							13
On site	185,000	2030	2039	10	18,500	9	
Off site	130,000	2030	2039	10	13,000	7	
<b>Tank-Filling Grout Facility Deactivation (CLO_DEAGRO)</b>							
Radiological workers	480	2040	2040	1	480	1	
Nonradiological workers							4
On site	4,320	2040	2040	1	4,320	3	
Off site	1,040	2040	2040	1	1,040	1	
<b>Ancillary Equipment Grouting (CLO_ANCFIL)</b>							
Radiological workers	338,000	2012	2032	21	16,100	8	
Nonradiological workers							8
On site	N/A						
Off site	N/A						

**Table I-20. Tank Closure Alternative 3B Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Ancillary Equipment Removal (CLO_ANCREM)</b>							
Radiological workers	166,000	2028	2033	6	27,700	14	14
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>BX and SX Tank Farm Soil Removal (CLO_SOIL)</b>							
Radiological workers	33,000	2028	2033	6	5,500	3	6
Nonradiological workers							
On site	30,000	2028	2033	6	5,000	3	
Off site	N/A						
<b>Containment Structure Construction (CLO_CONCS)</b>							
Radiological workers	2,000	2024	2027	4	500	1	4
Nonradiological workers							
On site	20,000	2024	2027	4	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS)</b>							
Radiological workers	2,000	2034	2036	3	667	1	5
Nonradiological workers							
On site	20,000	2034	2036	3	6,670	4	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier Construction (CLO_RCRA)</b>							
Radiological workers	1,430,000	2035	2041	7	204,000	99	394
Nonradiological workers							
On site	4,290,000	2035	2041	7	613,000	295	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	9
Nonradiological workers							
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						3
Nonradiological workers							
On site	471,000	2042	2141	100	4,710	3	
Off site	N/A						
<b>Total</b>	<b>7,480,000</b>				<b>967,000</b>	<b>478</b>	<b>465</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 13.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

## I.2.6 Tank Closure Alternative 3C: Existing WTP Vitrification with Thermal Supplemental Treatment (Steam Reforming); Landfill Closure

**Table I-21. Tank Closure Alternative 3C Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	12
Nonradiological workers							
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						380
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	282	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						232
Nonradiological workers							
Onsite construction	1,780,000	2014	2019	6	297,000	143	
Onsite exempt	1,100,000	2014	2019	6	183,000	89	
Offsite design	1,350,000	2014	2019	6	225,000	109	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	45
Nonradiological workers							
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	104
Nonradiological workers							
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						61
Nonradiological workers							
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						906
Nonradiological workers							
On site	22,600,000	2006	2017	12	1,880,000	906	
Off site	7,540,000	2006	2017	12	628,000	302	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						190
Nonradiological workers							
On site	1,580,000	2035	2038	4	395,000	190	
Off site	466,000	2035	2038	4	117,000	56	

**Table I-21. Tank Closure Alternative 3C Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						
Nonradiological workers							454
On site	4,720,000	2013	2017	5	944,000	454	
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	173,000	2013	2016	4	43,300	21	
Nonradiological workers							50
On site	233,000	2013	2016	4	58,300	29	
Off site	N/A						
<b>Modified Sluicing Retrieval System (CON_MS)</b>							
Radiological workers	3,850,000	2013	2039	27	143,000	69	
Nonradiological workers							178
On site	6,080,000	2013	2039	27	225,000	109	
Off site	2,140,000	2013	2039	27	79,300	39	
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	8,100,000	2013	2026	14	579,000	279	
Nonradiological workers							587
On site	8,940,000	2013	2026	14	639,000	308	
Off site	4,790,000	2013	2026	14	342,000	165	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2027	2039	13	862,000	415	
Nonradiological workers							858
On site	12,000,000	2027	2039	13	923,000	443	
Off site	6,820,000	2027	2039	13	525,000	253	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	2,810	2015	2016	2	1,410	1	
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (CON_CH)</b>							
Radiological workers	N/A						
Nonradiological workers							60
On site	125,000	2008	2008	1	125,000	60	
Off site	42,100	2008	2008	1	42,100	21	
<b>Remote-Handled Mixed Transuranic Waste Facility (CON_RH)</b>							
Radiological workers	N/A						
Nonradiological workers							37
On site	154,000	2013	2014	2	77,000	37	
Off site	51,900	2013	2014	2	26,000	13	
<b>Transuranic Waste Interim Storage Facility (CON_TRU)</b>							
Radiological workers	N/A						
Nonradiological workers							4
On site	16,400	2008	2009	2	8,200	4	
Off site	N/A						

**Table I–21. Tank Closure Alternative 3C Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Steam Reforming Facility (200-West Area) (CON_SRW)</b>							
Radiological workers	N/A						
Nonradiological workers							284
On site	1,180,000	2016	2017	2	590,000	284	
Off site	398,000	2016	2017	2	199,000	96	
<b>Solid-Liquid Separations Facility (200-West Area) (CON_SEPW)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	156,000	2016	2017	2	78,000	38	
Off site	52,800	2016	2017	2	26,400	13	
<b>Steam Reforming Facility (200-East Area) (CON_SRE)</b>							
Radiological workers	N/A						
Nonradiological workers							430
On site	1,790,000	2016	2017	2	895,000	430	
Off site	603,000	2016	2017	2	302,000	145	
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							329
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	
<b>242-A Evaporator Replacement (CON EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							102
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>Total</b>	<b>128,000,000</b>				<b>14,600,000</b>	<b>7,040</b>	<b>5,340</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,700.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I–22. Tank Closure Alternative 3C Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	3,650,000	2018	2040	23	159,000	77	
Nonradiological workers							120
On site	2,040,000	2018	2040	23	88,700	43	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	40,200	2006	2039	34	1,180	1	
Nonradiological workers							4
On site	147,000	2006	2039	34	4,320	3	
Off site	105,000	2006	2039	34	3,090	2	

**Table I–22. Tank Closure Alternative 3C Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	8,840,000	2006	2039	34	260,000	125	651
Nonradiological workers							
On site	37,200,000	2006	2039	34	1,090,000	526	
Off site	5,270,000	2006	2039	34	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	11,600	2006	2039	34	341	1	28
Nonradiological workers							
On site	1,890,000	2006	2039	34	55,600	27	
Off site	14,700	2006	2039	34	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,250,000	2006	2039	34	36,800	18	44
Nonradiological workers							
On site	1,790,000	2006	2039	34	52,600	26	
Off site	1,970,000	2006	2039	34	57,900	28	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	46,100,000	2018	2039	22	2,100,000	1,010	1,700
Nonradiological workers							
On site	31,500,000	2018	2039	22	1,430,000	689	
Off site	4,620	2018	2039	22	210	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,100,000	2040	2040	1	2,100,000	1,010	1,700
Nonradiological workers							
On site	1,430,000	2040	2040	1	1,430,000	689	
Off site	210	2040	2040	1	210	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2039	2040	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Modified Sluicing Retrieval System (OPS_MS)</b>							
Radiological workers	5,780,000	2013	2039	27	214,000	103	171
Nonradiological workers							
On site	3,780,000	2013	2039	27	140,000	68	
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	5,170,000	2013	2026	14	369,000	178	339
Nonradiological workers							
On site	4,680,000	2013	2026	14	334,000	161	
Off site	N/A						
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2027	2039	13	590,000	284	541
Nonradiological workers							
On site	6,940,000	2027	2039	13	534,000	257	
Off site	N/A						

Table I-22. Tank Closure Alternative 3C Operations Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2141	124	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (OPS_CH)</b>							
Radiological workers	200,000	2009	2010	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (OPS_RH)</b>							
Radiological workers	1,000,000	2015	2019	5	200,000	97	97
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (OPS_TRU)</b>							
Radiological workers	N/A	2009	2034	26			0
Nonradiological workers					N/A	0	
On site	N/A						
Off site	N/A						
<b>Steam Reforming Facility (200-West Area) (OPS_SRW)</b>							
Radiological workers	3,840,000	2018	2039	22	175,000	84	112
Nonradiological workers							
On site	1,280,000	2018	2039	22	58,200	28	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (OPS_SEPW)</b>							
Radiological workers	2,800,000	2018	2039	22	127,000	62	81
Nonradiological workers							
On site	850,000	2018	2039	22	38,600	19	
Off site	N/A						
<b>Steam Reforming Facility (200-East Area) (OPS_SRE)</b>							
Radiological workers	6,390,000	2018	2039	22	290,000	140	187
Nonradiological workers							
On site	2,130,000	2018	2039	22	96,800	47	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	5,720,000	2006	2042	37	155,000	75	94
Nonradiological workers							
On site	1,430,000	2006	2042	37	38,600	19	
Off site	N/A						
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,710,000	2006	2040	35	48,900	24	32
Nonradiological workers							
On site	523,000	2006	2040	35	14,900	8	
Off site	N/A						

**Table I-22. Tank Closure Alternative 3C Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	4,200,000	2006	2052	47	89,400	43	43
Off site	N/A						
<b>Total</b>	<b>212,000,000</b>				<b>12,700,000</b>	<b>6,120</b>	<b>6,020</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 100.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

For Waste Treatment Plant operations, no allowance was made for full-time equivalents in ramp-up years.

For 200-East and 200-West Area Bulk Vitrification Facility operations, no allowance was made for full-time equivalents in ramp-up years.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-23. Tank Closure Alternative 3C Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	160	2041	2041	1	160	1	1
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	4,190,000	2041	2042	2	2,100,000	1,010	
Nonradiological workers							1,700
On site	2,880,000	2041	2042	2	1,440,000	692	
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2041	2041	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Modified Sluicing Retrieval System (DEA_MS)</b>							
Radiological workers	291,000	2013	2039	27	10,800	6	
Nonradiological workers							6
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	680,000	2013	2026	14	48,600	24	
Nonradiological workers							24
On site	N/A						
Off site	N/A						

Table I-23. Tank Closure Alternative 3C Deactivation Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2027	2039	13	19,800	10	10
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (DEA_CH)</b>							
Radiological workers	100,000	2011	2012	2	50,000	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (DEA_RH)</b>							
Radiological workers	200,000	2020	2021	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (DEA_TRU)</b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	80	2035	2035	1	80	1	
Off site	N/A						
<b>Steam Reforming Facility (200-West Area) (DEA_SRW)</b>							
Radiological workers	168,000	2040	2041	2	84,000	41	55
Nonradiological workers							
On site	56,000	2040	2041	2	28,000	14	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (DEA_SEPW)</b>							
Radiological workers	122,000	2040	2041	2	61,000	30	39
Nonradiological workers							
On site	37,000	2040	2041	2	18,500	9	
Off site	N/A						
<b>Steam Reforming Facility (200-East Area) (DEA_SRE)</b>							
Radiological workers	336,000	2040	2041	2	168,000	81	108
Nonradiological workers							
On site	112,000	2040	2041	2	56,000	27	
Off site	N/A						
<b>Effluent Treatment Facility (Original) (DEA_ETFO)</b>							
Radiological workers	77,300	2026	2026	1	77,300	38	48
Nonradiological workers							
On site	19,300	2026	2026	1	19,300	10	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)</b>							
Radiological workers	77,300	2043	2043	1	77,300	38	48
Nonradiological workers							
On site	19,300	2043	2043	1	19,300	10	
Off site	N/A						

**Table I-23. Tank Closure Alternative 3C Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	16
Nonradiological workers							
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2041	2041	1	24,400	12	16
Nonradiological workers							
On site	7,480	2041	2041	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>9,710,000</b>				<b>4,470,000</b>	<b>2,160</b>	<b>2,160</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-24. Tank Closure Alternative 3C Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Tank-Filling Grout Facility Construction (CLO_CONGRO)</b>							
Radiological workers	480	2028	2029	2	240	1	5
Nonradiological workers							
On site	13,400	2028	2029	2	6,700	4	
Off site	4,160	2028	2029	2	2,080	1	
<b>Tank-Filling Grout Facility Operations (CLO_OPSGRO)</b>							
Radiological workers	68,000	2030	2039	10	6,800	4	13
Nonradiological workers							
On site	185,000	2030	2039	10	18,500	9	
Off site	130,000	2030	2039	10	13,000	7	
<b>Tank-Filling Grout Facility Deactivation (CLO_DEAGRO)</b>							
Radiological workers	480	2040	2040	1	480	1	4
Nonradiological workers							
On site	4,320	2040	2040	1	4,320	3	
Off site	1,040	2040	2040	1	1,040	1	
<b>Ancillary Equipment Grouting (CLO_ANCFIL)</b>							
Radiological workers	338,000	2012	2032	21	16,100	8	8
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Ancillary Equipment Removal (CLO_ANCREM)</b>							
Radiological workers	166,000	2028	2033	6	27,700	14	14
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I-24. Tank Closure Alternative 3C Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>BX and SX Tank Farm Soil Removal (CLO_SOIL)</b>							
Radiological workers	33,000	2028	2033	6	5,500	3	
Nonradiological workers							6
On site	30,000	2028	2033	6	5,000	3	
Off site	N/A						
<b>Containment Structure Construction (CLO_CONCS)</b>							
Radiological workers	2,000	2024	2027	4	500	1	
Nonradiological workers							4
On site	20,000	2024	2027	4	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS)</b>							
Radiological workers	2,000	2034	2036	3	667	1	
Nonradiological workers							5
On site	20,000	2034	2036	3	6,670	4	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier Construction (CLO_RCRA)</b>							
Radiological workers	1,430,000	2035	2041	7	204,000	99	
Nonradiological workers							394
On site	4,290,000	2035	2041	7	613,000	295	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	
Nonradiological workers							9
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						
Nonradiological workers							3
On site	471,000	2042	2141	100	4,710	3	
Off site	N/A						
<b>Total</b>	<b>7,480,000</b>				<b>967,000</b>	<b>478</b>	<b>465</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 13.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.

**I.2.7 Tank Closure Alternative 4: Existing WTP Vitrification with Supplemental Treatment Technologies; Selective Clean Closure/Landfill Closure**

**Table I-25. Tank Closure Alternative 4 Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	12
Nonradiological workers							
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						381
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	283	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						231
Nonradiological workers							
Onsite construction	2,670,000	2014	2022	9	297,000	143	
Onsite exempt	1,650,000	2014	2022	9	183,000	88	
Offsite design	2,030,000	2014	2022	9	226,000	109	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	45
Nonradiological workers							
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	104
Nonradiological workers							
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						61
Nonradiological workers							
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						904
Nonradiological workers							
On site	22,600,000	2006	2017	12	1,880,000	904	
Off site	7,540,000	2006	2017	12	628,000	302	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						190
Nonradiological workers							
On site	1,580,000	2038	2041	4	395,000	190	
Off site	466,000	2038	2041	4	117,000	57	

Table I-25. Tank Closure Alternative 4 Construction Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						
Nonradiological workers							454
On site	4,720,000	2013	2017	5	944,000	454	
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	189,000	2013	2016	4	47,300	23	
Nonradiological workers							54
On site	255,000	2013	2016	4	63,800	31	
Off site	N/A						
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	21,700,000	2013	2042	30	723,000	348	
Nonradiological workers							733
On site	24,000,000	2013	2042	30	800,000	385	
Off site	12,900,000	2013	2042	30	430,000	207	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2013	2042	30	373,000	180	
Nonradiological workers							373
On site	12,000,000	2013	2042	30	400,000	193	
Off site	6,820,000	2013	2042	30	227,000	110	
<b>Chemical Wash System (CON_CHW)</b>							
Radiological workers	2,380,000	2013	2042	30	79,300	39	
Nonradiological workers							47
On site	472,000	2013	2042	30	15,700	8	
Off site	635,000	2013	2042	30	21,200	11	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	2,810	2015	2016	2	1,410	1	
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (CON_CH)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	125,000	2008	2008	1	125,000	61	
Off site	42,100	2008	2008	1	42,100	21	
<b>Remote-Handled Mixed Transuranic Waste Facility (CON_RH)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	154,000	2013	2014	2	77,000	38	
Off site	51,900	2013	2014	2	26,000	13	
<b>Transuranic Waste Interim Storage Facility (CON_TRU)</b>							
Radiological workers	N/A						
Nonradiological workers							4
On site	16,400	2008	2009	2	8,200	4	
Off site	N/A						

**Table I–25. Tank Closure Alternative 4 Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Bulk Vitrification Facility (200-West Area) (CON_BV)</b>							
Radiological workers	N/A						
Nonradiological workers							165
On site	684,000	2016	2017	2	342,000	165	
Off site	231,000	2016	2017	2	116,000	56	
<b>Solid-Liquid Separations Facility (200-West Area) (CON_SEPW)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	156,000	2016	2017	2	78,000	38	
Off site	52,800	2016	2017	2	26,400	13	
<b>Cast Stone Facility (200-East Area) (CON_CG)</b>							
Radiological workers	N/A						
Nonradiological workers							113
On site	467,000	2016	2017	2	234,000	113	
Off site	158,000	2016	2017	2	79,000	38	
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							329
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	
<b>242-A Evaporator Replacement (CON_EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							102
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>Total</b>	<b>156,000,000</b>				<b>12,200,000</b>	<b>5,860</b>	<b>4,440</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,420.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I–26. Tank Closure Alternative 4 Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	4,130,000	2018	2043	26	159,000	77	
Nonradiological workers							120
On site	2,310,000	2018	2043	26	88,800	43	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	43,700	2006	2042	37	1,180	1	
Nonradiological workers							4
On site	160,000	2006	2042	37	4,320	3	
Off site	114,000	2006	2042	37	3,080	2	

Table I-26. Tank Closure Alternative 4 Operations Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	9,620,000	2006	2042	37	260,000	125	650
Nonradiological workers							
On site	40,400,000	2006	2042	37	1,090,000	525	
Off site	5,740,000	2006	2042	37	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	12,600	2006	2042	37	341	1	28
Nonradiological workers							
On site	2,060,000	2006	2042	37	55,700	27	
Off site	16,000	2006	2042	37	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,360,000	2006	2042	37	36,800	18	44
Nonradiological workers							
On site	1,940,000	2006	2042	37	52,400	26	
Off site	2,150,000	2006	2042	37	58,100	28	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	52,300,000	2018	2042	25	2,090,000	1,010	1,700
Nonradiological workers							
On site	35,800,000	2018	2042	25	1,430,000	688	
Off site	5,250	2018	2042	25	210	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,090,000	2043	2043	1	2,090,000	1,010	1,700
Nonradiological workers							
On site	1,430,000	2043	2043	1	1,430,000	688	
Off site	210	2043	2043	1	210	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2042	2043	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	13,900,000	2013	2042	30	463,000	223	425
Nonradiological workers							
On site	12,600,000	2013	2042	30	420,000	202	
Off site	N/A						
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2013	2042	30	256,000	124	236
Nonradiological workers							
On site	6,940,000	2013	2042	30	231,000	112	
Off site	N/A						
<b>Chemical Wash System (OPS_CHW)</b>							
Radiological workers	10,800,000	2013	2042	30	360,000	174	331
Nonradiological workers							
On site	9,750,000	2013	2042	30	325,000	157	
Off site	N/A						

**Table I-26. Tank Closure Alternative 4 Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2144	127	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (OPS_CH)</b>							
Radiological workers	200,000	2009	2010	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (OPS_RH)</b>							
Radiological workers	1,000,000	2015	2019	5	200,000	97	97
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (OPS_TRU)</b>							
Radiological workers	N/A	2009	2034	26	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Bulk Vitrification Facility (200-West Area) (OPS_BV)</b>							
Radiological workers	3,400,000	2018	2039	22	155,000	75	94
Nonradiological workers							
On site	828,000	2018	2039	22	37,600	19	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (OPS_SEPW)</b>							
Radiological workers	2,800,000	2018	2039	22	127,000	62	81
Nonradiological workers							
On site	850,000	2018	2039	22	38,600	19	
Off site	N/A						
<b>Cast Stone Facility (200-East Area) (OPS_CG)</b>							
Radiological workers	912,000	2018	2039	22	41,500	20	43
Nonradiological workers							
On site	1,030,000	2018	2039	22	46,800	23	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	6,180,000	2006	2045	40	155,000	75	94
Nonradiological workers							
On site	1,550,000	2006	2045	40	38,800	19	
Off site	N/A						
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,810,000	2006	2042	37	48,900	24	32
Nonradiological workers							
On site	553,000	2006	2042	37	14,900	8	
Off site	N/A						

**Table I-26. Tank Closure Alternative 4 Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	4,200,000	2006	2052	47	89,400	43	43
Off site	N/A						
<b>Total</b>	<b>249,000,000</b>				<b>12,200,000</b>	<b>5,900</b>	<b>5,800</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 100.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

For Waste Treatment Plant operations, no allowance was made for full-time equivalents in ramp-up years.

For 200-East and 200-West Area Bulk Vitrification Facility operations, no allowance was made for full-time equivalents in ramp-up years.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I-27. Tank Closure Alternative 4 Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	160	2044	2044	1	160	1	1
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	4,190,000	2044	2045	2	2,100,000	1,010	
Nonradiological workers							1,700
On site	2,880,000	2044	2045	2	1,440,000	693	
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2044	2044	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	1,820,000	2013	2042	30	60,700	30	
Nonradiological workers							30
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2013	2042	30	8,600	5	
Nonradiological workers							5
On site	N/A						
Off site	N/A						

**Table I-27. Tank Closure Alternative 4 Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Chemical Wash System (DEA_CHW)</b>							
Radiological workers	144,000	2013	2042	30	4,800	3	
Nonradiological workers							3
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (DEA_CH)</b>							
Radiological workers	100,000	2011	2012	2	50,000	25	
Nonradiological workers							25
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (DEA_RH)</b>							
Radiological workers	200,000	2020	2021	2	100,000	49	
Nonradiological workers							49
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (DEA_TRU)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	80	2035	2035	1	80	1	
Off site	N/A						
<b>Bulk Vitrification Facility (200-West Area) (DEA_BV)</b>							
Radiological workers	148,000	2040	2041	2	74,000	36	
Nonradiological workers							45
On site	36,000	2040	2041	2	18,000	9	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (DEA_SEPW)</b>							
Radiological workers	122,000	2040	2041	2	61,000	30	
Nonradiological workers							39
On site	37,000	2040	2041	2	18,500	9	
Off site	N/A						
<b>Cast Stone Facility (200-East Area) (DEA_CG)</b>							
Radiological workers	48,000	2040	2041	2	24,000	12	
Nonradiological workers							25
On site	54,000	2040	2041	2	27,000	13	
Off site	N/A						
<b>Effluent Treatment Facility (Original) (DEA_ETFO)</b>							
Radiological workers	77,300	2026	2026	1	77,300	38	
Nonradiological workers							48
On site	19,300	2026	2026	1	19,300	10	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)</b>							
Radiological workers	77,300	2046	2046	1	77,300	38	
Nonradiological workers							48
On site	19,300	2046	2046	1	19,300	10	
Off site	N/A						

**Table I–27. Tank Closure Alternative 4 Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	16
Nonradiological workers							
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2043	2043	1	24,400	12	16
Nonradiological workers							
On site	7,480	2043	2043	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>10,300,000</b>				<b>4,270,000</b>	<b>2,070</b>	<b>2,060</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 10.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I–28. Tank Closure Alternative 4 Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Tank-Filling Grout Facility Construction (CLO_CONGRO)</b>							
Radiological workers	480	2031	2032	2	240	1	5
Nonradiological workers							
On site	13,400	2031	2032	2	6,700	4	
Off site	4,160	2031	2032	2	2,080	1	
<b>Tank-Filling Grout Facility Operations (CLO_OPAGRO)</b>							
Radiological workers	54,400	2033	2042	10	5,440	3	11
Nonradiological workers							
On site	148,000	2033	2042	10	14,800	8	
Off site	104,000	2033	2042	10	10,400	5	
<b>Tank-Filling Grout Facility Deactivation (CLO_DEAGRO)</b>							
Radiological workers	480	2043	2043	1	480	1	4
Nonradiological workers							
On site	4,320	2043	2043	1	4,320	3	
Off site	1,040	2043	2043	1	1,040	1	
<b>Ancillary Equipment Grouting (CLO_ANCFIL)</b>							
Radiological workers	262,000	2012	2032	21	12,500	7	7
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I–28. Tank Closure Alternative 4 Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Containment Structure Construction (CLO_CONCS)</b>							
Radiological workers	2,000	2018	2021	4	500	1	
Nonradiological workers							4
On site	20,000	2018	2021	4	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS)</b>							
Radiological workers	2,000	2042	2044	3	667	1	
Nonradiological workers							5
On site	20,000	2042	2044	3	6,670	4	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier Construction (CLO_RCRA)</b>							
Radiological workers	800,000	2038	2044	7	114,000	55	
Nonradiological workers							220
On site	2,400,000	2038	2044	7	343,000	165	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	
Nonradiological workers							9
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						
Nonradiological workers							3
On site	471,000	2045	2144	100	4,710	3	
Off site	N/A						
<b>Removal of BX Tank Farm Tanks, Ancillary Equipment, and Soils (CLO_REMTBX)</b>							
Radiological workers	520,000	2022	2033	12	43,300	21	
Nonradiological workers							55
On site	824,000	2022	2033	12	68,700	34	
Off site	N/A						
<b>Removal of Deep Soil–BX Tank Farm (CLO_REMSBX)</b>							
Radiological workers	293,000	2034	2041	8	36,600	18	
Nonradiological workers							39
On site	339,000	2034	2041	8	42,400	21	
Off site	N/A						
<b>Removal of SX Tank Farm Tanks, Ancillary Equipment, and Soils (CLO_REMTSX)</b>							
Radiological workers	649,000	2022	2033	12	54,100	27	
Nonradiological workers							69
On site	1,030,000	2022	2033	12	85,800	42	
Off site	N/A						
<b>Removal of Deep Soil–SX Tank Farm (CLO_REMSSX)</b>							
Radiological workers	896,000	2034	2041	8	112,000	54	
Nonradiological workers							117
On site	1,040,000	2034	2041	8	130,000	63	
Off site	N/A						

**Table I–28. Tank Closure Alternative 4 Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Preprocessing Facility Construction (CLO_CONPPF)</b>							
Radiological workers	N/A						
Nonradiological workers							2,390
On site	14,900,000	2019	2021	3	4,970,000	2,390	
Off site	5,040,000	2019	2021	3	1,680,000	808	
<b>Preprocessing Facility Operations (CLO_OPSPPF)</b>							
Radiological workers	3,890,000	2022	2042	21	185,000	89	
Nonradiological workers							92
On site	120,000	2022	2042	21	5,710	3	
Off site	N/A						
<b>Preprocessing Facility Deactivation (CLO_DEAPPF)</b>							
Radiological workers	195,000	2043	2043	1	195,000	94	
Nonradiological workers							97
On site	5,990	2043	2043	1	5,990	3	
Off site	N/A						
<b>Total</b>	<b>34,300,000</b>				<b>8,170,000</b>	<b>3,950</b>	<b>3,130</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 820.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**I.2.8 Tank Closure Alternative 5: Expanded WTP Vitrification with Supplemental Treatment Technologies; Landfill Closure****Table I–29. Tank Closure Alternative 5 Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	
Nonradiological workers							12
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						
Nonradiological workers							381
Onsite construction	1,760,000	2011	2013	3	587,000	283	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	

**Table I-29. Tank Closure Alternative 5 Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Module (CON_ISM)</b>							
Radiological workers	N/A						
Nonradiological workers							
Onsite construction	1,780,000	2014	2019	6	297,000	143	231
Onsite exempt	1,100,000	2014	2019	6	183,000	88	
Offsite design	1,350,000	2014	2019	6	225,000	109	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	
Nonradiological workers							45
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	
Nonradiological workers							104
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						
Nonradiological workers							904
On site	22,600,000	2006	2017	12	1,880,000	904	
Off site	7,540,000	2006	2017	12	628,000	302	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						
Nonradiological workers							190
On site	1,580,000	2029	2032	4	395,000	190	
Off site	466,000	2029	2032	4	117,000	57	
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						
Nonradiological workers							454
On site	4,720,000	2013	2017	5	944,000	454	
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	173,000	2013	2016	4	43,300	21	
Nonradiological workers							50
On site	233,000	2013	2016	4	58,300	29	
Off site	N/A						
<b>Double-Shell Tank Replacement (CON_DST)</b>							
Radiological workers	N/A						
Nonradiological workers							144
On site	1,790,000	2014	2019	6	298,000	144	
Off site	644,000	2014	2019	6	107,000	52	

Table I-29. Tank Closure Alternative 5 Construction Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Sulfate Removal Facility (CON_SUL)</b>							
Radiological workers	N/A						
Nonradiological workers							722
On site	3,000,000	2016	2017	2	1,500,000	722	
Off site	1,010,000	2016	2017	2	505,000	243	
<b>Modified Sluicing Retrieval System (CON_MS)</b>							
Radiological workers	2,780,000	2013	2033	21	132,000	64	
Nonradiological workers							165
On site	4,390,000	2013	2033	21	209,000	101	
Off site	1,550,000	2013	2033	21	73,800	36	
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	8,100,000	2013	2023	11	736,000	354	
Nonradiological workers							745
On site	8,940,000	2013	2023	11	813,000	391	
Off site	4,790,000	2013	2023	11	435,000	210	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2024	2033	10	1,120,000	539	
Nonradiological workers							1,120
On site	12,000,000	2024	2033	10	1,200,000	577	
Off site	6,820,000	2024	2033	10	682,000	328	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	2,810	2015	2016	2	1,410	1	
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (CON_CH)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	125,000	2008	2008	1	125,000	61	
Off site	42,100	2008	2008	1	42,100	21	
<b>Remote-Handled Mixed Transuranic Waste Facility (CON_RH)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	154,000	2013	2014	2	77,000	38	
Off site	51,900	2013	2014	2	26,000	13	
<b>Transuranic Waste Interim Storage Facility (CON_TRU)</b>							
Radiological workers	N/A						
Nonradiological workers							4
On site	16,400	2008	2009	2	8,200	4	
Off site	N/A						
<b>Bulk Vitrification Facility (200-West Area) (CON_BV)</b>							
Radiological workers	N/A						
Nonradiological workers							165
On site	684,000	2016	2017	2	342,000	165	
Off site	231,000	2016	2017	2	116,000	56	

**Table I-29. Tank Closure Alternative 5 Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Solid-Liquid Separations Facility (200-West Area) (CON_SEPW)</b>							
Radiological workers	N/A						
Nonradiological workers							38
On site	156,000	2016	2017	2	78,000	38	
Off site	52,800	2016	2017	2	26,400	13	
<b>Cast Stone Facility (200-East Area) (CON_CG)</b>							
Radiological workers	N/A						
Nonradiological workers							113
On site	467,000	2016	2017	2	234,000	113	
Off site	158,000	2015	2016	2	79,000	38	
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							329
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	
<b>242-A Evaporator Replacement (CON EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							102
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>Total</b>	<b>129,000,000</b>				<b>16,900,000</b>	<b>8,140</b>	<b>6,180</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,960.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-30. Tank Closure Alternative 5 Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	2,700,000	2018	2034	17	159,000	77	
Nonradiological workers							120
On site	1,510,000	2018	2034	17	88,800	43	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	33,100	2006	2033	28	1,180	1	
Nonradiological workers							4
On site	121,000	2006	2033	28	4,320	3	
Off site	86,500	2006	2033	28	3,090	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	7,280,000	2006	2033	28	260,000	125	
Nonradiological workers							650
On site	30,600,000	2006	2033	28	1,090,000	525	
Off site	4,340,000	2006	2033	28	155,000	75	

Table I-30. Tank Closure Alternative 5 Operations Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	9,550	2006	2033	28	341	1	
Nonradiological workers							28
On site	1,560,000	2006	2033	28	55,700	27	
Off site	12,100	2006	2033	28	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,030,000	2006	2033	28	36,800	18	
Nonradiological workers							44
On site	1,470,000	2006	2033	28	52,500	26	
Off site	1,620,000	2006	2033	28	57,900	28	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	33,500,000	2018	2033	16	2,090,000	1,010	
Nonradiological workers							1,700
On site	23,000,000	2018	2033	16	1,440,000	693	
Off site	3,000	2018	2033	16	188	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,100,000	2034	2034	1	2,100,000	1,010	
Nonradiological workers							1,700
On site	1,440,000	2034	2034	1	1,440,000	693	
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2033	2034	2	51,500	25	
Nonradiological workers							25
On site	N/A						
Off site	N/A						
<b>Double-Shell Tank Replacements (OPS_DST)</b>							
Radiological workers	2,140	2020	2033	14		1	
Nonradiological workers							13
On site	349,000	2020	2033	14	24,900	12	
Off site	2,710	2020	2033	14	194	1	
<b>Sulfate Removal Facility (OPS_SUL)</b>							
Radiological workers	6,280,000	2018	2033	16	393,000	189	
Nonradiological workers							236
On site	1,560,000	2018	2033	16	97,500	47	
Off site	N/A						
<b>Modified Sluicing Retrieval System (OPS_MS)</b>							
Radiological workers	4,180,000	2013	2033	21	199,000	96	
Nonradiological workers							159
On site	2,730,000	2013	2033	21	130,000	63	
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	5,170,000	2013	2023	11	470,000	226	
Nonradiological workers							431
On site	4,680,000	2013	2023	11	425,000	205	
Off site	N/A						

**Table I-30. Tank Closure Alternative 5 Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2024	2033	10	767,000	369	703
Nonradiological workers							
On site	6,940,000	2024	2033	10	694,000	334	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2139	122			0
Nonradiological workers					N/A	0	
On site	N/A						
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (OPS_CH)</b>							
Radiological workers	200,000	2009	2010	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (OPS_RH)</b>							
Radiological workers	1,000,000	2015	2019	5	200,000	97	97
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (OPS_TRU)</b>							
Radiological workers	N/A	2009	2034	26			0
Nonradiological workers					N/A	0	
On site	N/A						
Off site	N/A						
<b>Bulk Vitrification Facility (200-West Area) (OPS_BV)</b>							
Radiological workers	3,400,000	2018	2033	16	213,000	103	128
Nonradiological workers							
On site	828,000	2018	2033	16	51,800	25	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (OPS_SEPW)</b>							
Radiological workers	2,800,000	2018	2033	16	175,000	85	111
Nonradiological workers							
On site	850,000	2018	2033	16	53,100	26	
Off site	N/A						
<b>Cast Stone Facility (200-East Area) (OPS_CG)</b>							
Radiological workers	912,000	2018	2033	16	57,000	28	59
Nonradiological workers							
On site	1,030,000	2018	2033	16	64,400	31	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	4,790,000	2006	2036	31	155,000	75	94
Nonradiological workers							
On site	1,200,000	2006	2036	31	38,700	19	
Off site	N/A						

**Table I-30. Tank Closure Alternative 5 Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,420,000	2006	2034	29	49,000	24	32
Nonradiological workers							
On site	434,000	2006	2034	29	15,000	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						43
Nonradiological workers							
On site	4,200,000	2006	2052	47	89,400	43	
Off site	N/A						
<b>Total</b>	<b>175,000,000</b>				<b>13,500,000</b>	<b>6,540</b>	<b>6,430</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 110.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

For Waste Treatment Plant, Sulfate Removal Facility, 200-East and 200-West Area Bulk Vitrification Facility, and Cast Stone Facility operations, no allowance was made for full-time equivalents in ramp-up years.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I-31. Tank Closure Alternative 5 Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	160	2035	2035	1	160	1	
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	4,190,000	2035	2036	2	2,100,000	1,010	1,700
Nonradiological workers							
On site	2,880,000	2035	2036	2	1,440,000	693	
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2035	2035	1	23,900	12	12
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Modified Sluicing Retrieval System (DEA_MS)</b>							
Radiological workers	210,000	2013	2033	21	10,000	5	5
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I-31. Tank Closure Alternative 5 Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	680,000	2013	2023	11	61,800	30	30
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2024	2033	10	25,800	13	13
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Sulfate Removal Facility (DEA_SUL)</b>							
Radiological workers	661,000	2034	2035	2	331,000	160	200
Nonradiological workers							
On site	164,000	2034	2035	2	82,000	40	
Off site	N/A						
<b>Contact-Handled Mixed Transuranic Waste Facilities (DEA_CH)</b>							
Radiological workers	100,000	2011	2012	2	50,000	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Remote-Handled Mixed Transuranic Waste Facility (DEA_RH)</b>							
Radiological workers	200,000	2020	2021	2	100,000	49	49
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Transuranic Waste Interim Storage Facility (DEA_TRU)</b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	80	2035	2035	1	80	1	
Off site	N/A						
<b>Bulk Vitrification Facility (200-West Area) (DEA_BV)</b>							
Radiological workers	148,000	2034	2035	2	74,000	36	45
Nonradiological workers							
On site	36,000	2034	2035	2	18,000	9	
Off site	N/A						
<b>Solid-Liquid Separations Facility (200-West Area) (DEA_SEPW)</b>							
Radiological workers	122,000	2034	2035	2	61,000	30	39
Nonradiological workers							
On site	37,000	2034	2035	2	18,500	9	
Off site	N/A						
<b>Cast Stone Facility (200-East Area) (DEA_CG)</b>							
Radiological workers	48,000	2034	2035	2	24,000	12	25
Nonradiological workers							
On site	54,000	2034	2035	2	27,000	13	
Off site	N/A						

**Table I–31. Tank Closure Alternative 5 Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Effluent Treatment Facility (Original) (DEA_ETFO)</b>							
Radiological workers	77,300	2026	2026	1	77,300	38	48
Nonradiological workers							
On site	19,300	2026	2026	1	19,300	10	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)</b>							
Radiological workers	77,300	2037	2037	1	77,300	38	48
Nonradiological workers							
On site	19,300	2037	2037	1	19,300	10	
Off site	N/A						
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	16
Nonradiological workers							
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2035	2035	1	24,400	12	16
Nonradiological workers							
On site	7,480	2035	2035	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>10,100,000</b>				<b>4,700,000</b>	<b>2,280</b>	<b>2,270</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 10.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I–32. Tank Closure Alternative 5 Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Tank-Filling Grout Facility Construction (CLO_CONGRO)</b>							
Radiological workers	480	2022	2023	2	240	1	5
Nonradiological workers							
On site	13,400	2022	2023	2	6,700	4	
Off site	4,160	2022	2023	2	2,080	1	
<b>Tank-Filling Grout Facility Operations (CLO_OPSGRO)</b>							
Radiological workers	68,000	2024	2033	10	6,800	4	13
Nonradiological workers							
On site	185,000	2024	2033	10	18,500	9	
Off site	130,000	2024	2033	10	13,000	7	
<b>Tank-Filling Grout Facility Deactivation (CLO_DEAGRO)</b>							
Radiological workers	480	2034	2034	1	480	1	4
Nonradiological workers							
On site	4,320	2034	2034	1	4,320	3	
Off site	1,040	2034	2034	1	1,040	1	

**Table I–32. Tank Closure Alternative 5 Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Ancillary Equipment Grouting (CLO_ANCFIL)</b>							
Radiological workers	287,000	2013	2033	21	13,700	7	7
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Hanford Barrier Construction (CLO_HAN)</b>							
Radiological workers	2,380,000	2029	2039	11	216,000	104	417
Nonradiological workers							
On site	7,150,000	2029	2039	11	650,000	313	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2012	2022	11	4,040	2	9
Nonradiological workers							
On site	147,000	2012	2022	11	13,400	7	
Off site	79,000	2012	2022	11	7,180	4	
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						3
Nonradiological workers							
On site	471,000	2040	2139	100	4,710	3	
Off site	N/A						
<b>Total</b>	<b>11,000,000</b>				<b>962,000</b>	<b>471</b>	<b>458</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 13.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**I.2.9 Tank Closure Alternative 6A: All Vitrification/No Separations;  
Clean Closure–Base Case**

**Table I–33. Tank Closure Alternative 6A, Base Case, Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	12
Nonradiological workers							
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						381
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	283	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	

**Table I-33. Tank Closure Alternative 6A, Base Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						
Nonradiological workers							
Onsite construction	57,000,000	2014	2142	129	442,000	213	345
Onsite exempt	35,200,000	2014	2142	129	273,000	132	
Offsite design	43,200,000	2014	2142	129	335,000	162	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	
Nonradiological workers							45
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	
Nonradiological workers							104
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						
Nonradiological workers							904
On site	22,600,000	2006	2017	12	1,880,000	904	
Off site	7,540,000	2006	2017	12	628,000	302	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						
Nonradiological workers							190
On site	1,580,000	2158	2161	4	395,000	190	
Off site	466,000	2158	2161	4	117,000	57	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	189,000	2013	2016	4	47,300	23	
Nonradiological workers							54
On site	255,000	2013	2016	4	63,800	31	
Off site	N/A						
<b>Double-Shell Tank Replacements (CON_DST)<sup>a</sup></b>							
Radiological workers	N/A						
Nonradiological workers							1,010
On site	37,600,000	2029	2114	18	2,090,000	1,010	
Off site	13,500,000	2029	2114	18	750,000	361	

**Table I-33. Tank Closure Alternative 6A, Base Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	33,100,000	2013	2162	150	221,000	107	224
Nonradiological workers							
On site	36,500,000	2013	2162	150	243,000	117	
Off site	19,600,000	2013	2162	150	131,000	63	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	9,690,000	2013	2162	150	64,600	32	66
Nonradiological workers							
On site	10,300,000	2013	2162	150	68,700	34	
Off site	5,900,000	2013	2162	150	39,300	19	
<b>Chemical Wash System (CON_CHW)</b>							
Radiological workers	3,060,000	2013	2162	150	20,400	10	12
Nonradiological workers							
On site	607,000	2013	2162	150	4,050	2	
Off site	818,000	2013	2162	150	5,450	3	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)<sup>b</sup></b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	19,700	2017	2138	14	1,410	1	
Off site	N/A						
<b>Underground Transfer Line Replacements (CON_UTLU)</b>							
Radiological workers	N/A						61
Nonradiological workers							
On site	126,000	2064	2064	1	126,000	61	
Off site	17,400	2064	2064	1	17,400	9	
<b>Waste Treatment Plant Replacement (CON_WTPU)<sup>c</sup></b>							
Radiological workers	N/A						678
Nonradiological workers							
On site	33,800,000	2067	2138	24	1,410,000	678	
Off site	11,300,000	2067	2138	24	471,000	227	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility Replacement (CON_STFU)<sup>d</sup></b>							
Radiological workers	N/A						380
Nonradiological workers							
Onsite construction	3,510,000	2070	2132	6	585,000	282	
Onsite exempt	1,220,000	2070	2132	6	203,000	98	
Offsite design	1,500,000	2070	2132	6	250,000	121	
<b>Immobilized High-Level Radioactive Waste Interim Storage Module Replacement (CON_ISMU)</b>							
Radiological workers	N/A						351
Nonradiological workers							
Onsite construction	39,200,000	2074	2160	87	451,000	217	
Onsite exempt	24,200,000	2074	2160	87	278,000	134	
Offsite design	29,700,000	2074	2160	87	341,000	164	

**Table I-33. Tank Closure Alternative 6A, Base Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>High-Level Radioactive Waste Debris Storage Facilities (CON_HLWST)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	577,000	2041	2110	70	8,240	4	4
Off site	N/A						
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	2,050,000	2023	2025	3	683,000	329	329
Off site	704,000	2023	2025	3	235,000	113	
<b>Effluent Treatment Facility Replacement (CON ETFU)<sup>e</sup></b>							
Radiological workers	N/A						
Nonradiological workers							
On site	8,190,000	2053	2145	12	683,000	329	329
Off site	865,000	2053	2145	12	72,100	35	
<b>242-A Evaporator Replacement (CON EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	635,000	2015	2017	3	212,000	102	102
Off site	218,000	2015	2017	3	72,700	35	
<b>242-A Evaporator Replacement (CON EVAU) Five 3-year construction periods<sup>f</sup></b>							
Radiological workers	N/A						
Nonradiological workers							
On site	3,180,000	2040	2142	15	212,000	102	102
Off site	1,150,000	2040	2142	15	76,700	37	
<b>Total</b>	<b>513,000,000</b>				<b>15,800,000</b>	<b>7,630</b>	<b>5,740</b>

<sup>a</sup> Replacement double-shell tanks construction activities would occur over three 6-year periods, totaling 18 years.

Period 1, 2029–2034

Period 2, 2069–2074

Period 3, 2109–2114

<sup>b</sup> High-Level Radioactive Waste Melter Interim Storage Facilities construction activities would occur over seven 2-year periods, totaling 14 years.

Period 1, 2017–2018

Period 2, 2037–2038

Period 3, 2057–2058

Period 4, 2077–2078

Period 5, 2097–2098

Period 6, 2117–2118

Period 7, 2137–2138

<sup>c</sup> Replacement Waste Treatment Plant construction activities would occur over two 12-year periods, totaling 24 years.

Period 1, 2067–2078

Period 2, 2127–2138

<sup>d</sup> Replacement Immobilized High-Level Radioactive Waste Shipping/Transfer Facility construction activities would occur over two 3-year periods, totaling 6 years.

Period 1, 2070–2072

Period 2, 2130–2132

**Table I–33. Tank Closure Alternative 6A, Base Case, Construction Rollup  
Workforce Estimate (continued)**

<sup>e</sup> Replacement Effluent Treatment Facility construction activities would occur over four 3-year periods, totaling 12 years.  
 Period 1, 2053–2055  
 Period 2, 2083–2085  
 Period 3, 2113–2115  
 Period 4, 2143–2145

<sup>f</sup> Replacement 242-A Evaporator construction activities would occur over five 3-year periods, totaling 15 years.  
 Period 1, 2040–2042  
 Period 2, 2065–2067  
 Period 3, 2090–2092  
 Period 4, 2115–2117  
 Period 5, 2140–2142

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,890.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I–34. Tank Closure Alternative 6A, Base Case, Operations Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	256,000,000	2018	2163	146	1,750,000	842	1,310
Nonradiological workers							
On site	143,000,000	2018	2163	146	979,000	471	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	186,000	2006	2162	157	1,180	1	4
Nonradiological workers							
On site	680,000	2006	2162	157	4,330	3	
Off site	485,000	2006	2162	157	3,090	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	40,800,000	2006	2162	157	260,000	125	654
Nonradiological workers							
On site	172,000,000	2006	2162	157	1,100,000	529	
Off site	24,300,000	2006	2162	157	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	53,500	2006	2162	157	341	1	28
Nonradiological workers							
On site	8,720,000	2006	2162	157	55,500	27	
Off site	67,800	2006	2162	157	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	5,760,000	2006	2162	157	36,700	18	44
Nonradiological workers							
On site	8,250,000	2006	2162	157	52,500	26	
Off site	9,110,000	2006	2162	157	58,000	28	

**Table I–34. Tank Closure Alternative 6A, Base Case, Operations Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	388,000,000	2018	2162	145	2,680,000	1,290	2,170
Nonradiological workers							
On site	266,000,000	2018	2162	145	1,830,000	880	
Off site	39,000	2018	2162	145	269	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,680,000	2163	2163	1	2,680,000	1,290	2,180
Nonradiological workers							
On site	1,840,000	2163	2163	1	1,840,000	885	
Off site	269	2163	2163	1	269	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2162	2163	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	21,100,000	2013	2162	150	141,000	68	130
Nonradiological workers							
On site	19,100,000	2013	2162	150	127,000	62	
Off site	N/A						
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	6,630,000	2013	2162	150	44,200	22	42
Nonradiological workers							
On site	6,000,000	2013	2162	150	40,000	20	
Off site	N/A						
<b>Chemical Wash System (OPS_CHW)</b>							
Radiological workers	13,900,000	2013	2162	150	92,700	45	86
Nonradiological workers							
On site	12,600,000	2013	2162	150	84,000	41	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2262	245	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>High-Level Radioactive Waste Debris Storage Facilities (OPS_HLWST)</b>							
Radiological workers	N/A	2042	2153	112	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	24,900,000	2006	2166	161	155,000	75	94
Nonradiological workers							
On site	6,220,000	2006	2166	161	38,600	19	
Off site	N/A						

**Table I-34. Tank Closure Alternative 6A, Base Case, Operations Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	7,140,000	2018	2163	146	48,900	24	
Nonradiological workers							32
On site	2,180,000	2018	2163	146	14,900	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						
Nonradiological workers							44
On site	14,500,000	2006	2167	162	89,500	44	
Off site	N/A						
<b>Total</b>	<b>1,460,000,000</b>				<b>14,400,000</b>	<b>6,950</b>	<b>6,840</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 110.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-35. Tank Closure Alternative 6A, Base Case, Deactivation Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	3,040	2078	2188	111	27	1	
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)<sup>a</sup></b>							
Radiological workers	13,500,000	2078	2166	9	1,500,000	722	
Nonradiological workers							1,220
On site	9,240,000	2078	2166	9	1,030,000	496	
Off site	N/A						
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	2,780,000	2013	2162	150	18,500	9	
Nonradiological workers							9
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	223,000	2013	2162	150	1,490	1	
Nonradiological workers							1
On site	N/A						
Off site	N/A						

**Table I-35. Tank Closure Alternative 6A, Base Case, Deactivation Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Chemical Wash System (DEA_CHW)</b>							
Radiological workers	185,000	2013	2162	150	1,230	1	
Nonradiological workers							1
On site	N/A						
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2164	2164	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)<sup>b</sup></b>							
Radiological workers	464,000	2026	2167	6	77,300	38	
Nonradiological workers							48
On site	116,000	2026	2167	6	19,300	10	
Off site	N/A						
<b>Packaged HLW Debris Storage Facility (DEA_HLWST)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	35	2154	2154	1	35	1	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)<sup>c</sup></b>							
Radiological workers	171,000	2018	2168	7	24,400	12	
Nonradiological workers							16
On site	52,300	2018	2168	7	7,470	4	
Off site	N/A						
<b>Total</b>	<b>26,800,000</b>				<b>2,700,000</b>	<b>1,310</b>	<b>1,310</b>

<sup>a</sup> Waste Treatment Plant deactivation activities would occur over three 3-year periods, totaling 9 years.

Period 1, 2078–2080  
Period 2, 2138–2140  
Period 3, 2164–2166

<sup>b</sup> Effluent Treatment Facility deactivation activities would occur over six 1-year periods, totaling 6 years.

Period 1, 2026–2026  
Period 2, 2056–2056  
Period 3, 2086–2086  
Period 4, 2116–2116  
Period 5, 2146–2146  
Period 6, 2167–2167

<sup>c</sup> Replacement 242-A Evaporator deactivation activities would occur over seven 1-year periods, totaling 7 years.

Period 1, 2018–2018  
Period 2, 2043–2043  
Period 3, 2068–2068  
Period 4, 2093–2093  
Period 5, 2118–2118  
Period 6, 2143–2143  
Period 7, 2168–2168

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** HLW=high-level radioactive waste; N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-36. Tank Closure Alternative 6A, Base Case, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Containment Structure Construction (CLO_CONCS)<sup>a</sup></b>							
Radiological workers	12,000	2038	2141	24	500	1	
Nonradiological workers							4
On site	120,000	2038	2141	24	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS)<sup>b</sup></b>							
Radiological workers	12,000	2062	2164	21	571	1	
Nonradiological workers							4
On site	120,000	2062	2164	21	5,710	3	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	
Nonradiological workers							9
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RCRA)</b>							
Radiological workers	429,000	2149	2150	2	215,000	104	
Nonradiological workers							415
On site	1,290,000	2149	2150	2	645,000	311	
Off site	N/A						
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						
Nonradiological workers							3
On site	471,000	2151	2250	100	4,710	3	
Off site	N/A						
<b>Removal of B Tank Farm (CLO_REMTB)</b>							
Radiological workers	693,000	2065	2076	12	57,800	28	
Nonradiological workers							73
On site	1,100,000	2065	2076	12	91,700	45	
Off site	N/A						
<b>Removal of T Tank Farm (CLO_REMTT)</b>							
Radiological workers	693,000	2126	2137	12	57,800	28	
Nonradiological workers							73
On site	1,100,000	2126	2137	12	91,700	45	
Off site	N/A						
<b>Removal of BY Tank Farm (CLO_REMTBY)</b>							
Radiological workers	520,000	2111	2122	12	43,300	21	
Nonradiological workers							55
On site	824,000	2111	2122	12	68,700	34	
Off site	N/A						
<b>Removal of BX Tank Farm (CLO_REMTBX)</b>							
Radiological workers	520,000	2042	2053	12	43,300	21	
Nonradiological workers							55
On site	824,000	2042	2053	12	68,700	34	
Off site	N/A						

**Table I-36. Tank Closure Alternative 6A, Base Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of C Tank Farm (CLO_REMTC)</b>							
Radiological workers	693,000	2088	2099	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2088	2099	12	91,700	45	
Off site	N/A						
<b>Removal of A Tank Farm (CLO_REMTA)</b>							
Radiological workers	260,000	2142	2153	12	21,700	11	28
Nonradiological workers							
On site	412,000	2142	2153	12	34,300	17	
Off site	N/A						
<b>Removal of AX Tank Farm (CLO_REMTAX)</b>							
Radiological workers	173,000	2142	2153	12	14,400	7	19
Nonradiological workers							
On site	275,000	2142	2153	12	22,900	12	
Off site	N/A						
<b>Removal of S Tank Farm (CLO_REMST)</b>							
Radiological workers	520,000	2126	2137	12	43,300	21	55
Nonradiological workers							
On site	824,000	2126	2137	12	68,700	34	
Off site	N/A						
<b>Removal of TY Tank Farm (CLO_REMTTY)</b>							
Radiological workers	260,000	2111	2122	12	21,700	11	28
Nonradiological workers							
On site	412,000	2111	2122	12	34,300	17	
Off site	N/A						
<b>Removal of TX Tank Farm (CLO_REMTTX)</b>							
Radiological workers	779,000	2088	2099	12	64,900	32	82
Nonradiological workers							
On site	1,240,000	2088	2099	12	103,000	50	
Off site	N/A						
<b>Removal of U Tank Farm (CLO_REMTU)</b>							
Radiological workers	693,000	2065	2076	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2065	2076	12	91,700	45	
Off site	N/A						
<b>Removal of SX Tank Farm (CLO_REMTSX)</b>							
Radiological workers	649,000	2042	2053	12	54,100	27	69
Nonradiological workers							
On site	1,030,000	2042	2053	12	85,800	42	
Off site	N/A						
<b>Removal of Deep Soil-B Tank Farm (CLO_REMSB)</b>							
Radiological workers	73,400	2077	2084	8	9,180	5	11
Nonradiological workers							
On site	84,900	2077	2084	8	10,600	6	
Off site	N/A						

**Table I-36. Tank Closure Alternative 6A, Base Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of Deep Soil-T Tank Farm (CLO_REMST)</b>							
Radiological workers	564,000	2138	2145	8	70,500	34	74
Nonradiological workers							
On site	652,000	2138	2145	8	81,500	40	
Off site	N/A						
<b>Removal of Deep Soil-BX Tank Farm (CLO_REMSBX)</b>							
Radiological workers	293,000	2054	2061	8	36,600	18	39
Nonradiological workers							
On site	339,000	2054	2061	8	42,400	21	
Off site	N/A						
<b>Removal of Deep Soil-C Tank Farm (CLO_REMSC)</b>							
Radiological workers	4,450	2100	2107	8	556	1	2
Nonradiological workers							
On site	5,140	2100	2107	8	643	1	
Off site	N/A						
<b>Removal of Deep Soil-A Tank Farm (CLO_REMSA)</b>							
Radiological workers	13,300	2154	2161	8	1,660	1	2
Nonradiological workers							
On site	15,400	2154	2161	8	1,930	1	
Off site	N/A						
<b>Removal of Deep Soil-AX Tank Farm (CLO_REMSAX)</b>							
Radiological workers	222,000	2154	2161	8	27,800	14	30
Nonradiological workers							
On site	257,000	2154	2161	8	32,100	16	
Off site	N/A						
<b>Removal of Deep Soil-TX Tank Farm (CLO_REMSTX)</b>							
Radiological workers	701,000	2100	2107	8	87,600	43	92
Nonradiological workers							
On site	810,000	2100	2107	8	101,000	49	
Off site	N/A						
<b>Removal of Deep Soil-U Tank Farm (CLO_REMSU)</b>							
Radiological workers	367,000	2077	2084	8	45,900	23	49
Nonradiological workers							
On site	424,000	2077	2084	8	53,000	26	
Off site	N/A						
<b>Removal of Deep Soil-SX Tank Farm (CLO_REMSXX)</b>							
Radiological workers	896,000	2054	2061	8	112,000	54	117
Nonradiological workers							
On site	1,040,000	2054	2061	8	130,000	63	
Off site	N/A						
<b>Preprocessing Facility Construction (CLO_CONPPF)</b>							
Radiological workers	N/A						2,390
Nonradiological workers							
On site	14,900,000	2039	2041	3	4,970,000	2,390	
Off site	5,040,000	2039	2041	3	1,680,000	808	

**Table I–36. Tank Closure Alternative 6A, Base Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Preprocessing Facility Operations (CLO_OPSPPF)</b>							
Radiological workers	13,100,000	2042	2162	121	108,000	52	
Nonradiological workers							54
On site	403,000	2042	2162	121	3,330	2	
Off site	N/A						
<b>Preprocessing Facility Deactivation (CLO_DEAPPF)</b>							
Radiological workers	108,000	2163	2163	1	108,000	52	
Nonradiological workers							54
On site	3,330	2163	2163	1	3,330	2	
Off site	N/A						
<b>Total</b>	<b>59,700,000</b>				<b>10,000,000</b>	<b>4,840</b>	<b>4,030</b>

<sup>a</sup> Containment Structure construction activities would occur over six 4-year periods, totaling 24 years.

Period 1, 2038–2041; 2 facilities

Period 2, 2061–2064; 2 facilities

Period 3, 2084–2087; 2 facilities

Period 4, 2107–2110; 2 facilities

Period 5, 2122–2125; 2 facilities

Period 6, 2138–2141; 2 facilities

<sup>b</sup> Containment Structure deactivation activities would occur over seven 3-year periods, totaling 21 years.

Period 1, 2062–2064; 2 facilities

Period 2, 2085–2087; 2 facilities

Period 3, 2108–2110; 2 facilities

Period 4, 2123–2125; 2 facilities

Period 5, 2146–2148; 1 facility

Period 6, 2138–2140; 1 facility

Period 7, 2162–2164; 2 facilities

Formula: Hours per year = (total hours/12 containment structures)/3 years of deactivation per deactivation period.

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 810.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**I.2.10 Tank Closure Alternative 6A: All Vitrification/No Separations;  
Clean Closure–Option Case**

**Table I–37. Tank Closure Alternative 6A, Option Case, Construction Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	
Nonradiological workers							12
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	

**Table I-37. Tank Closure Alternative 6A, Option Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological Workers	N/A						
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	283	381
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological Workers	N/A						
Nonradiological workers							
Onsite construction	57,000,000	2014	2142	129	442,000	213	345
Onsite exempt	35,200,000	2014	2142	129	273,000	132	
Offsite design	43,200,000	2014	2142	129	335,000	162	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	
Nonradiological workers							45
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	
Nonradiological workers							104
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						
Nonradiological workers							904
On site	22,600,000	2006	2017	12	1,880,000	904	
Off site	7,540,000	2006	2017	12	628,000	302	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						
Nonradiological workers							190
On site	1,580,000	2158	2161	4	395,000	190	
Off site	466,000	2158	2161	4	117,000	57	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	189,000	2013	2016	4	47,300	23	
Nonradiological workers							54
On site	255,000	2013	2016	4	63,800	31	
Off site	N/A						

**Table I-37. Tank Closure Alternative 6A, Option Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Double-Shell Tank Replacement (CON_DST)<sup>a</sup></b>							
Radiological workers	N/A						
Nonradiological workers							1,010
On site	37,600,000	2029	2114	18	2,090,000	1,010	
Off site	13,500,000	2029	2114	18	750,000	361	
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	33,100,000	2013	2162	150	221,000	107	
Nonradiological workers							224
On site	36,500,000	2013	2162	150	243,000	117	
Off site	19,600,000	2013	2162	150	131,000	63	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	9,690,000	2013	2162	150	64,600	32	
Nonradiological workers							66
On site	10,300,000	2013	2162	150	68,700	34	
Off site	5,900,000	2013	2162	150	39,300	19	
<b>Chemical Wash System (CON_CHW)</b>							
Radiological workers	3,060,000	2013	2162	150	20,400	10	
Nonradiological workers							12
On site	607,000	2013	2162	150	4,050	2	
Off site	818,000	2013	2162	150	5,450	3	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)<sup>b</sup></b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	19,700	2017	2138	14	1,410	1	
Off site	N/A						
<b>Underground Transfer Line Replacements (CON_UTLU)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	126,000	2064	2064	1	126,000	61	
Off site	17,400	2064	2064	1	17,400	9	
<b>Waste Treatment Plant Replacement (CON_WTPU)<sup>c</sup></b>							
Radiological workers	N/A						
Nonradiological workers							678
On site	33,800,000	2067	2138	24	1,410,000	678	
Off site	11,300,000	2067	2138	24	471,000	227	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility Replacement (CON_STFU)<sup>d</sup></b>							
Radiological workers	N/A						
Nonradiological workers							380
Onsite construction	3,510,000	2070	2132	6	585,000	282	
Onsite exempt	1,220,000	2070	2132	6	203,000	98	
Offsite design	1,500,000	2070	2132	6	250,000	121	

**Table I-37. Tank Closure Alternative 6A, Option Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Module Replacement (CON_ISMU)</b>							
Radiological workers	N/A						
Nonradiological workers							
Onsite construction	39,200,000	2074	2160	87	451,000	217	351
Onsite exempt	24,200,000	2074	2160	87	278,000	134	
Offsite design	29,700,000	2074	2160	87	341,000	164	
<b>High-Level Radioactive Waste Debris Storage Facilities (CON_HLWST)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	577,000	2041	2110	70	8,240	4	4
Off site	N/A						
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	2,050,000	2023	2025	3	683,000	329	329
Off site	704,000	2023	2025	3	235,000	113	
<b>Effluent Treatment Facility Replacement (CON ETFU)<sup>e</sup></b>							
Radiological workers	N/A						
Nonradiological workers							
On site	8,190,000	2053	2145	12	683,000	329	329
Off site	865,000	2053	2145	12	72,100	35	
<b>242-A Evaporator Replacement (CON EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	635,000	2015	2017	3	212,000	102	102
Off site	218,000	2015	2017	3	72,700	35	
<b>242-A Evaporator Replacement (CON EVAU)<sup>f</sup></b>							
Radiological workers	N/A						
Nonradiological workers							
On site	3,180,000	2040	2142	15	212,000	102	102
Off site	1,150,000	2040	2142	15	76,700	37	
<b>Total</b>	<b>513,000,000</b>				<b>15,800,000</b>	<b>7,630</b>	<b>5,750</b>

<sup>a</sup> Replacement double-shell tanks construction activities would occur over three 6-year periods, totaling 18 years.

Period 1, 2029–2034  
Period 2, 2069–2074  
Period 3, 2109–2114

<sup>b</sup> High-Level Radioactive Waste Melter Interim Storage Facilities construction activities would occur over seven 2-year periods, totaling 14 years.

Period 1, 2017–2018  
Period 2, 2037–2038  
Period 3, 2057–2058  
Period 4, 2077–2078  
Period 5, 2097–2098  
Period 6, 2117–2118  
Period 7, 2137–2138

<sup>c</sup> Replacement Waste Treatment Plant construction activities would occur over two 12-year periods, totaling 24 years.

Period 1, 2067–2078  
Period 2, 2127–2138

**Table I-37. Tank Closure Alternative 6A, Option Case, Construction Rollup Workforce Estimate (continued)**

- d Replacement Immobilized High-Level Radioactive Waste Shipping/Transfer Facility construction activities would occur over two 3-year periods, totaling 6 years.  
 Period 1, 2070–2072  
 Period 2, 2130–2132
- e Replacement Effluent Treatment Facility construction activities would occur over four 3-year periods, totaling 12 years.  
 Period 1, 2053–2055  
 Period 2, 2083–2085  
 Period 3, 2113–2115  
 Period 4, 2143–2145
- f Replacement 242-A Evaporator construction activities would occur over five 3-year periods, totaling 15 years.  
 Period 1, 2040–2042  
 Period 2, 2065–2067  
 Period 3, 2090–2092  
 Period 4, 2115–2117  
 Period 5, 2140–2142

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,880.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-38. Tank Closure Alternative 6A, Option Case, Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	256,000,000	2018	2163	146	1,750,000	842	1,310
Nonradiological workers							
On site	143,000,000	2018	2163	146	979,000	471	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	186,000	2006	2162	157	1,180	1	4
Nonradiological workers							
On site	680,000	2006	2162	157	4,330	3	
Off site	485,000	2006	2162	157	3,090	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	40,800,000	2006	2162	157	260,000	125	654
Nonradiological workers							
On site	172,000,000	2006	2162	157	1,100,000	529	
Off site	24,300,000	2006	2162	157	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	53,500	2006	2162	157	341	1	28
Nonradiological workers							
On site	8,720,000	2006	2162	157	55,500	27	
Off site	67,800	2006	2162	157	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	5,760,000	2006	2162	157	36,700	18	44
Nonradiological workers							
On site	8,250,000	2006	2162	157	52,500	26	
Off site	9,110,000	2006	2162	157	58,000	28	

**Table I-38. Tank Closure Alternative 6A, Option Case, Operations Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTP)</b>							
Radiological workers	388,000,000	2018	2162	145	2,680,000	1,290	2,170
Nonradiological workers							
On site	266,000,000	2018	2162	145	1,830,000	880	
Off site	39,000	2018	2162	145	269	1	
<b>Waste Treatment Plant (OPS_WTPCSC)</b>							
Radiological workers	2,680,000	2163	2163	1	2,680,000	1,290	2,180
Nonradiological workers							
On site	1,840,000	2163	2163	1	1,840,000	885	
Off site	269	2163	2163	1	269	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2162	2163	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	21,100,000	2013	2162	150	141,000	68	130
Nonradiological workers							
On site	19,100,000	2013	2162	150	127,000	62	
Off site	N/A						
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	6,630,000	2013	2162	150	44,200	22	42
Nonradiological workers							
On site	6,000,000	2013	2162	150	40,000	20	
Off site	N/A						
<b>Chemical Wash System (OPS_CHW)</b>							
Radiological workers	13,900,000	2013	2162	150	92,700	45	86
Nonradiological workers							
On site	12,600,000	2013	2162	150	84,000	41	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2262	245	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>High-Level Radioactive Waste Debris Storage Facilities (OPS_HLWST)</b>							
Radiological workers	N/A	2042	2153	112	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	24,900,000	2006	2166	161	155,000	75	94
Nonradiological workers							
On site	6,220,000	2006	2166	161	38,600	19	
Off site	N/A						

**Table I-38. Tank Closure Alternative 6A, Option Case, Operations Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	7,140,000	2018	2163	146	48,900	24	
Nonradiological workers							32
On site	2,180,000	2018	2163	146	14,900	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						
Nonradiological workers							44
On site	14,500,000	2006	2167	162	89,500	44	
Off site	N/A						
<b>Total</b>	<b>1,460,000,000</b>				<b>14,400,000</b>	<b>6,950</b>	<b>6,840</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 110.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I-39. Tank Closure Alternative 6A, Option Case, Deactivation Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	3,040	2078	2188	111	27	1	
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)<sup>a</sup></b>							
Radiological workers	13,500,000	2079	2166	9	1,500,000	722	
Nonradiological workers							1,220
On site	9,230,000	2079	2166	9	1,030,000	496	
Off site	N/A						
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	2,780,000	2013	2162	150	18,500	9	
Nonradiological workers							9
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	223,000	2013	2162	150	1,490	1	
Nonradiological workers							1
On site	N/A						
Off site	N/A						

**Table I-39. Tank Closure Alternative 6A, Option Case, Deactivation Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Chemical Wash System (DEA_CHW)</b>							
Radiological workers	185,000	2013	2162	150	1,230	1	
Nonradiological workers							1
On site	N/A						
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2164	2164	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Packaged HLW Debris Storage Facility (DEA_HLWST)</b>							
Radiological workers	N/A	2154	2154	1			
Nonradiological workers							1
On site	35	2154	2154	1	35	1	
Off site	N/A	2154	2154	1			
<b>Effluent Treatment Facility Replacement (DEA ETF)<sup>b</sup></b>							
Radiological workers	464,000	2026	2167	6	77,300	38	
Nonradiological workers							48
On site	116,000	2026	2167	6	19,300	10	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)<sup>c</sup></b>							
Radiological workers	171,000	2018	2168	7	24,400	12	
Nonradiological workers							16
On site	52,300	2018	2168	7	7,470	4	
Off site	N/A						
<b>Total</b>	<b>26,700,000</b>				<b>2,700,000</b>	<b>1,310</b>	<b>1,310</b>

<sup>a</sup> Waste Treatment Plant deactivation activities would occur over three 3-year periods, totaling 9 years.

Period 1, 2079–2081  
Period 2, 2139–2141  
Period 3, 2164–2166

<sup>b</sup> Replacement Effluent Treatment Facility deactivation activities would occur over six 1-year periods, totaling 6 years.

Period 1, 2026–2026  
Period 2, 2056–2056  
Period 3, 2086–2086  
Period 4, 2116–2116  
Period 5, 2146–2146  
Period 6, 2167–2167

<sup>c</sup> Replacement 242-A Evaporator deactivation activities would occur over seven 1-year periods, totaling 7 years.

Period 1, 2018–2018  
Period 2, 2043–2043  
Period 3, 2068–2068  
Period 4, 2093–2093  
Period 5, 2118–2118  
Period 6, 2143–2143  
Period 7, 2168–2168

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-40. Tank Closure Alternative 6A, Option Case, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Containment Structure Construction (CLO_CONCS1)<sup>a</sup></b>							
Radiological workers	12,000	2038	2141	24	500	1	
Nonradiological workers							4
On site	120,000	2038	2141	24	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS1)<sup>b</sup></b>							
Radiological workers	12,000	2062	2164	21	571	1	
Nonradiological workers							4
On site	120,000	2062	2164	21	5,710	3	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	
Nonradiological workers							9
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Removal of B Tank Farm (CLO_REMTB)</b>							
Radiological workers	693,000	2065	2076	12	57,800	28	
Nonradiological workers							73
On site	1,100,000	2065	2076	12	91,700	45	
Off site	N/A						
<b>Removal of T Tank Farm (CLO_REMTT)</b>							
Radiological workers	693,000	2126	2137	12	57,800	28	
Nonradiological workers							73
On site	1,100,000	2126	2137	12	91,700	45	
Off site	N/A						
<b>Removal of BY Tank Farm (CLO_REMTBY)</b>							
Radiological workers	520,000	2111	2122	12	43,300	21	
Nonradiological workers							55
On site	824,000	2111	2122	12	68,700	34	
Off site	N/A						
<b>Removal of BX Tank Farm (CLO_REMTBX)</b>							
Radiological workers	520,000	2042	2053	12	43,300	21	
Nonradiological workers							55
On site	824,000	2042	2053	12	68,700	34	
Off site	N/A						
<b>Removal of C Tank Farm (CLO_REMTC)</b>							
Radiological workers	693,000	2088	2099	12	57,800	28	
Nonradiological workers							73
On site	1,100,000	2088	2099	12	91,700	45	
Off site	N/A						
<b>Removal of A Tank Farm (CLO_REMTA)</b>							
Radiological workers	260,000	2142	2153	12	21,700	11	
Nonradiological workers							28
On site	412,000	2142	2153	12	34,300	17	
Off site	N/A						

**Table I-40. Tank Closure Alternative 6A, Option Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of AX Tank Farm (CLO_REMTAX)</b>							
Radiological workers	173,000	2142	2153	12	14,400	7	19
Nonradiological workers							
On site	275,000	2142	2153	12	22,900	12	
Off site	N/A						
<b>Removal of S Tank Farm (CLO_REMTS)</b>							
Radiological workers	520,000	2126	2137	12	43,300	21	55
Nonradiological workers							
On site	824,000	2126	2137	12	68,700	34	
Off site	N/A						
<b>Removal of TY Tank Farm (CLO_REMTTY)</b>							
Radiological workers	260,000	2111	2122	12	21,700	11	28
Nonradiological workers							
On site	412,000	2111	2122	12	34,300	17	
Off site	N/A						
<b>Removal of TX Tank Farm (CLO_REMTTX)</b>							
Radiological workers	779,000	2088	2099	12	64,900	32	82
Nonradiological workers							
On site	1,240,000	2088	2099	12	103,000	50	
Off site	N/A						
<b>Removal of U Tank Farm (CLO_REMTU)</b>							
Radiological workers	693,000	2065	2076	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2065	2076	12	91,700	45	
Off site	N/A						
<b>Removal of SX Tank Farm (CLO_REMTSX)</b>							
Radiological workers	649,000	2042	2053	12	54,100	27	69
Nonradiological workers							
On site	1,030,000	2042	2053	12	85,800	42	
Off site	N/A						
<b>Removal of Deep Soil-B Tank Farm (CLO_REMSB)</b>							
Radiological workers	73,400	2077	2084	8	9,180	5	11
Nonradiological workers							
On site	84,900	2077	2084	8	10,600	6	
Off site	N/A						
<b>Removal of Deep Soil-T Tank Farm (CLO_REMTST)</b>							
Radiological workers	564,000	2138	2145	8	70,500	34	74
Nonradiological workers							
On site	652,000	2138	2145	8	81,500	40	
Off site	N/A						
<b>Removal of Deep Soil-BX Tank Farm (CLO_REMSBX)</b>							
Radiological workers	293,000	2054	2061	8	36,600	18	39
Nonradiological workers							
On site	339,000	2054	2061	8	42,400	21	
Off site	N/A						

**Table I-40. Tank Closure Alternative 6A, Option Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of Deep Soil–C Tank Farm (CLO_REMSC)</b>							
Radiological workers	4,450	2100	2107	8	556	1	
Nonradiological workers							2
On site	5,140	2100	2107	8	643	1	
Off site	N/A						
<b>Removal of Deep Soil–A Tank Farm (CLO_REMSA)</b>							
Radiological workers	13,300	2154	2161	8	1,660	1	
Nonradiological workers							2
On site	15,400	2154	2161	8	1,930	1	
Off site	N/A						
<b>Removal of Deep Soil–AX Tank Farm (CLO_REMSAX)</b>							
Radiological workers	222,000	2154	2161	8	27,800	14	
Nonradiological workers							30
On site	257,000	2154	2161	8	32,100	16	
Off site	N/A						
<b>Removal of Deep Soil–TX Tank Farm (CLO_REMSTX)</b>							
Radiological workers	701,000	2100	2107	8	87,600	43	
Nonradiological workers							92
On site	810,000	2100	2107	8	101,000	49	
Off site	N/A						
<b>Removal of Deep Soil–U Tank Farm (CLO_REMSU)</b>							
Radiological workers	367,000	2077	2084	8	45,900	23	
Nonradiological workers							49
On site	424,000	2077	2084	8	53,000	26	
Off site	N/A						
<b>Removal of Deep Soil–SX Tank Farm (CLO_REMSXX)</b>							
Radiological workers	896,000	2054	2061	8	112,000	54	
Nonradiological workers							117
On site	1,040,000	2054	2061	8	130,000	63	
Off site	N/A						
<b>Clean Closure of B Area Cribs and Trenches (Ditches) (CLO_REMBC&amp;T)</b>							
Radiological workers	4,000,000	2054	2084	31	129,000	63	
Nonradiological workers							135
On site	4,630,000	2054	2084	31	149,000	72	
Off site	N/A						
<b>Clean Closure of T Area Cribs and Trenches (Ditches) (CLO_REMTC&amp;T)</b>							
Radiological workers	4,000,000	2100	2145	46	87,000	42	
Nonradiological workers							91
On site	4,630,000	2100	2145	46	101,000	49	
Off site	N/A						
<b>Containment Structure Construction–B and T Area Cribs and Trenches (Ditches) (CLO_CONCS2)<sup>c</sup></b>							
Radiological workers	4,000	2050	2099	8	500	1	
Nonradiological workers							4
On site	40,000	2050	2099	8	5,000	3	
Off site	N/A						

**Table I-40. Tank Closure Alternative 6A, Option Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Decontamination and Decommissioning of the Structure over the Tank Farm after Soil Removal (CLO_DEACS2)<sup>d</sup></b>							
Radiological workers	4,000	2085	2148	6	667	1	5
Nonradiological workers							
On site	40,000	2085	2148	6	6,670	4	
Off site	N/A						
<b>Preprocessing Facility Construction (CLO_CONPPF)</b>							
Radiological workers	N/A						4,780
Nonradiological workers							
On site	29,800,000	2039	2041	3	9,930,000	4,780	
Off site	10,100,000	2039	2041	3	3,370,000	1,620	
<b>Preprocessing Facility Operations (CLO_OPSPPF)</b>							
Radiological workers	50,400,000	2042	2162	121	417,000	201	208
Nonradiological workers							
On site	1,550,000	2042	2162	121	12,800	7	
Off site	N/A						
<b>Preprocessing Facility Deactivation (CLO_DEAPPF)</b>							
Radiological workers	380,000	2163	2163	1	380,000	183	189
Nonradiological workers							
On site	11,700	2163	2163	1	11,700	6	
Off site	N/A						
<b>Total</b>	<b>134,000,000</b>				<b>16,900,000</b>	<b>8,150</b>	<b>6,530</b>

<sup>a</sup> Tank Farm Containment Structure construction activities would occur over six 4-year periods, totaling 24 years.

- Period 1, 2038–2041; 2 facilities
- Period 2, 2061–2064; 2 facilities
- Period 3, 2084–2087; 2 facilities
- Period 4, 2107–2110; 2 facilities
- Period 5, 2122–2125; 2 facilities
- Period 6, 2138–2141; 2 facilities

<sup>b</sup> Tank Farm Containment Structure deactivation activities would occur over seven 3-year periods, totaling 21 years.

- Period 1, 2062–2064; 2 facilities
- Period 2, 2085–2087; 2 facilities
- Period 3, 2108–2110; 2 facilities
- Period 4, 2123–2125; 2 facilities
- Period 5, 2138–2140; 1 facility
- Period 6, 2146–2148; 1 facility
- Period 7, 2162–2164; 2 facilities

<sup>c</sup> B and T Area cribs and trenches (ditches) Containment Structure construction activities would occur over two 4-year periods, totaling 8 years.

- Period 1, 2050–2053; 2 facilities
- Period 2, 2096–2099; 2 facilities

<sup>d</sup> B and T Area cribs and trenches (ditches) Containment Structure deactivation activities would occur over two 3-year periods, totaling 6 years.

- Period 1, 2085–2087; 2 facilities
- Period 2, 2146–2148; 2 facilities

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,620.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

### I.2.11 Tank Closure Alternative 6B: All Vitrification with Separations; Clean Closure–Base Case

**Table I-41. Tank Closure Alternative 6B, Base Case, Construction Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	12
Nonradiological workers							
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						381
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	283	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						222
Nonradiological workers							
Onsite construction	3,120,000	2014	2024	11	284,000	137	
Onsite exempt	1,930,000	2014	2024	11	175,000	85	
Offsite design	2,360,000	2014	2024	11	215,000	104	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	45
Nonradiological workers							
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	104
Nonradiological workers							
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						61
Nonradiological workers							
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						1,190
Nonradiological workers							
On site	29,700,000	2006	2017	12	2,480,000	1,190	
Off site	9,930,000	2006	2017	12	828,000	399	
<b>Additional Low-Activity Waste Melters (CON_LAW)</b>							
Radiological workers	N/A						340
Nonradiological workers							
On site	7,060,000	2008	2017	10	706,000	340	
Off site	2,390,000	2008	2017	10	239,000	115	

**Table I-41. Tank Closure Alternative 6B, Base Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						
Nonradiological workers							190
On site	1,580,000	2035	2038	4	395,000	190	
Off site	466,000	2035	2038	4	117,000	57	
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						
Nonradiological workers							454
On site	4,720,000	2013	2017	5	944,000	454	
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	189,000	2013	2016	4	47,300	23	
Nonradiological workers							54
On site	255,000	2013	2016	4	63,800	31	
Off site	N/A						
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	21,700,000	2013	2043	31	700,000	337	
Nonradiological workers							710
On site	24,000,000	2013	2043	31	774,000	373	
Off site	12,900,000	2013	2043	31	416,000	200	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2013	2043	31	361,000	174	
Nonradiological workers							361
On site	12,000,000	2013	2043	31	387,000	187	
Off site	6,820,000	2013	2043	31	220,000	106	
<b>Chemical Wash System (CON_CHW)</b>							
Radiological workers	2,380,000	2013	2043	31	76,800	37	
Nonradiological workers							45
On site	472,000	2013	2043	31	15,200	8	
Off site	635,000	2013	2043	31	20,500	10	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)<sup>a</sup></b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	5,620	2015	2030	4	1,410	1	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							329
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	

**Table I-41. Tank Closure Alternative 6B, Base Case, Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Effluent Treatment Facility Replacement (CON ETFU)<sup>b</sup></b>							
Radiological workers	N/A						
Nonradiological workers							328
On site	4,090,000	2053	2085	6	682,000	328	
Off site	736,000	2053	2085	6	123,000	60	
<b>242-A Evaporator Replacement (CON EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							102
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>Immobilized Low-Activity Waste Interim Storage Facility (CON_ILAWST)</b>							
Radiological workers	N/A						
Nonradiological workers							11
On site	603,000	2016	2043	28	21,500	11	
Off site	N/A						
<b>High-Level Radioactive Waste Debris Storage Facilities (CON_HLWST)</b>							
Radiological workers	N/A						
Nonradiological workers							4
On site	577,000	2021	2090	70	8,240	4	
Off site	N/A						
<b>Total</b>	<b>180,000,000</b>				<b>13,400,000</b>	<b>6,480</b>	<b>4,940</b>

<sup>a</sup> High-Level Radioactive Waste Melter Interim Storage Facilities construction activities would occur over two 2-year construction periods.

Period 1, 2015–2016

Period 2, 2029–2030

<sup>b</sup> Replacement Effluent Treatment Facility construction activities would occur over two 3-year construction periods.

Period 1, 2053–2055

Period 2, 2083–2085

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,540.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-42. Tank Closure Alternative 6B, Base Case, Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	3,650,000	2018	2040	23	159,000	77	
Nonradiological workers							120
On site	2,040,000	2018	2040	23	88,700	43	
Off site	N/A						

**Table I-42. Tank Closure Alternative 6B, Base Case, Operations Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	44,900	2006	2043	38	1,180	1	4
Nonradiological workers							
On site	165,000	2006	2043	38	4,340	3	
Off site	117,000	2006	2043	38	3,080	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	9,880,000	2006	2043	38	260,000	125	650
Nonradiological workers							
On site	41,500,000	2006	2043	38	1,090,000	525	
Off site	5,890,000	2006	2043	38	155,000	75	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,390,000	2006	2043	38	36,600	18	44
Nonradiological workers							
On site	2,000,000	2006	2043	38	52,600	26	
Off site	2,200,000	2006	2043	38	57,900	28	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	13,000	2006	2043	38	342	1	28
Nonradiological workers							
On site	2,110,000	2006	2043	38	55,500	27	
Off site	16,400	2006	2043	38	432	1	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	62,800,000	2018	2043	26	2,420,000	1,160	1,940
Nonradiological workers							
On site	42,100,000	2018	2043	26	1,620,000	779	
Off site	8,000	2018	2043	26	308	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,410,000	2040	2040	1	2,410,000	1,160	1,940
Nonradiological workers							
On site	1,620,000	2040	2040	1	1,620,000	779	
Off site	308	2040	2040	1	308	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2039	2040	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	13,900,000	2013	2043	31	448,000	216	412
Nonradiological workers							
On site	12,600,000	2013	2043	31	406,000	196	
Off site	N/A						

**Table I-42. Tank Closure Alternative 6B, Base Case, Operations Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2013	2043	31	247,000	119	227
Nonradiological workers							
On site	6,940,000	2013	2043	31	224,000	108	
Off site	N/A						
<b>Chemical Wash System (OPS_CHW)</b>							
Radiological workers	10,800,000	2013	2043	31	348,000	168	320
Nonradiological workers							
On site	9,750,000	2013	2043	31	315,000	152	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2199	182	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	14,700,000	2006	2100	95	155,000	75	94
Nonradiological workers							
On site	3,670,000	2006	2100	95	38,600	19	
Off site	N/A						
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,860,000	2006	2043	38	48,900	24	32
Nonradiological workers							
On site	568,000	2006	2043	38	14,900	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						43
Nonradiological workers							
On site	8,670,000	2006	2102	97	89,400	43	
Off site	N/A						
<b>High-Level Radioactive Waste Debris Storage Facility (OPS_ILAWST)</b>							
Radiological workers	N/A	2018	2199	182	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>High-Level Radioactive Waste Debris Storage Facilities (OPS_HLWST)</b>							
Radiological workers	N/A	2023	2199	177	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Total</b>	<b>271,000,000</b>				<b>12,400,000</b>	<b>5,990</b>	<b>5,880</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 110.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.

**Table I-43. Tank Closure Alternative 6B, Base Case, Deactivation Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	160	2041	2041	1	160	1	
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	3,800,000	2044	2045	2	1,900,000	914	
Nonradiological workers							1,530
On site	2,550,000	2044	2045	2	1,280,000	616	
Off site	500	2044	2045	2	250	1	
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	1,820,000	2013	2043	31	58,700	29	
Nonradiological workers							29
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2013	2043	31	8,320	4	
Nonradiological workers							4
On site	N/A						
Off site	N/A						
<b>Chemical Wash System (DEA_CHW)</b>							
Radiological workers	144,000	2013	2043	31	4,650	3	
Nonradiological workers							3
On site	N/A						
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2041	2041	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Packaged HLW Debris Storage Facility (DEA_HLWST)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	35	2089	2089	1	35	1	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)<sup>a</sup></b>							
Radiological workers	309,000	2026	2101	4	77,300	38	
Nonradiological workers							48
On site	77,300	2026	2101	4	19,300	10	
Off site	N/A						

**Table I-43. Tank Closure Alternative 6B, Base Case, Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	16
Nonradiological workers							
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2044	2044	1	24,400	12	16
Nonradiological workers							
On site	7,480	2044	2044	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>9,050,000</b>				<b>3,440,000</b>	<b>1,660</b>	<b>1,660</b>

<sup>a</sup> Replacement Effluent Treatment Facility deactivation activities would occur over four 1-year periods.

Period 1, 2026–2026

Period 2, 2056–2056

Period 3, 2086–2086

Period 4, 2101–2101

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** HLW=high-level radioactive waste; N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-44. Tank Closure Alternative 6B, Base Case, Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Containment Structure Construction (CLO_CONCS)<sup>a</sup></b>							
Radiological workers	12,000	2019	2076	12	1,000	1	6
Nonradiological workers							
On site	120,000	2019	2076	12	10,000	5	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS)<sup>b</sup></b>							
Radiological workers	12,000	2043	2099	15	800	1	5
Nonradiological workers							
On site	120,000	2043	2099	15	8,000	4	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	9
Nonradiological workers							
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	

**Table I-44. Tank Closure Alternative 6B, Base Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RCRA)</b>							
Radiological workers	429,000	2100	2101	2	215,000	104	415
Nonradiological workers							
On site	1,290,000	2100	2101	2	645,000	311	
Off site	N/A						
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						3
Nonradiological workers							
On site	471,000	2102	2201	100	4,710	3	
Off site	N/A						
<b>Removal of B Tank Farm (CLO_REMTB)</b>							
Radiological workers	693,000	2023	2034	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2023	2034	12	91,700	45	
Off site	N/A						
<b>Removal of T Tank Farm (CLO_REMTT)</b>							
Radiological workers	693,000	2077	2088	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2077	2088	12	91,700	45	
Off site	N/A						
<b>Removal of BY Tank Farm (CLO_REMTBY)</b>							
Radiological workers	520,000	2050	2061	12	43,300	21	55
Nonradiological workers							
On site	824,000	2050	2061	12	68,700	34	
Off site	N/A						
<b>Removal of BX Tank Farm (CLO_REMTBX)</b>							
Radiological workers	520,000	2023	2034	12	43,300	21	55
Nonradiological workers							
On site	824,000	2023	2034	12	68,700	34	
Off site	N/A						
<b>Removal of C Tank Farm (CLO_REMTC)</b>							
Radiological workers	693,000	2050	2061	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2050	2061	12	91,700	45	
Off site	N/A						
<b>Removal of A Tank Farm (CLO_REMTA)</b>							
Radiological workers	260,000	2077	2088	12	21,700	11	28
Nonradiological workers							
On site	412,000	2077	2088	12	34,300	17	
Off site	N/A						
<b>Removal of AX Tank Farm (CLO_REMTAX)</b>							
Radiological workers	173,000	2077	2088	12	14,400	7	19
Nonradiological workers							
On site	275,000	2077	2088	12	22,900	12	
Off site	N/A						

**Table I-44. Tank Closure Alternative 6B, Base Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of S Tank Farm (CLO_REMTS)</b>							
Radiological workers	520,000	2077	2088	12	43,300	21	55
Nonradiological workers							
On site	824,000	2077	2088	12	68,700	34	
Off site	N/A						
<b>Removal of TY Tank Farm (CLO_REMTTY)</b>							
Radiological workers	260,000	2050	2061	12	21,700	11	28
Nonradiological workers							
On site	412,000	2050	2061	12	34,300	17	
Off site	N/A						
<b>Removal of TX Tank Farm (CLO_REMTTX)</b>							
Radiological workers	779,000	2050	2061	12	64,900	32	82
Nonradiological workers							
On site	1,240,000	2050	2061	12	103,000	50	
Off site	N/A						
<b>Removal of U Tank Farm (CLO_REMTU)</b>							
Radiological workers	693,000	2023	2034	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2023	2034	12	91,700	45	
Off site	N/A						
<b>Removal of SX Tank Farm (CLO_REMTSX)</b>							
Radiological workers	649,000	2023	2034	12	54,100	27	69
Nonradiological workers							
On site	1,030,000	2023	2034	12	85,800	42	
Off site	N/A						
<b>Removal of Deep Soil-B Tank Farm (CLO_REMSB)</b>							
Radiological workers	73,400	2035	2042	8	9,180	5	11
Nonradiological workers							
On site	84,900	2035	2042	8	10,600	6	
Off site	N/A						
<b>Removal of Deep Soil-T Tank Farm (CLO_REMST)</b>							
Radiological workers	564,000	2089	2096	8	70,500	34	74
Nonradiological workers							
On site	652,000	2089	2096	8	81,500	40	
Off site	N/A						
<b>Removal of Deep Soil-BX Tank Farm (CLO_REMSBX)</b>							
Radiological workers	293,000	2035	2042	8	36,600	18	39
Nonradiological workers							
On site	339,000	2035	2042	8	42,400	21	
Off site	N/A						
<b>Removal of Deep Soil-C Tank Farm (CLO_REMSC)</b>							
Radiological workers	4,450	2062	2069	8	556	1	2
Nonradiological workers							
On site	5,140	2062	2069	8	643	1	
Off site	N/A						

**Table I-44. Tank Closure Alternative 6B, Base Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of Deep Soil–A Tank Farm (CLO_REMSA)</b>							
Radiological workers	13,300	2089	2096	8	1,660	1	
Nonradiological workers							2
On site	15,400	2089	2096	8	1,930	1	
Off site	N/A						
<b>Removal of Deep Soil–AX Tank Farm (CLO_REMSAX)</b>							
Radiological workers	222,000	2089	2096	8	27,800	14	
Nonradiological workers							30
On site	257,000	2089	2096	8	32,100	16	
Off site	N/A						
<b>Removal of Deep Soil–TX Tank Farm (CLO_REMSTX)</b>							
Radiological workers	701,000	2062	2069	8	87,600	43	
Nonradiological workers							92
On site	810,000	2062	2069	8	101,000	49	
Off site	N/A						
<b>Removal of Deep Soil–U Tank Farm (CLO_REMSU)</b>							
Radiological workers	367,000	2035	2042	8	45,900	23	
Nonradiological workers							49
On site	424,000	2035	2042	8	53,000	26	
Off site	N/A						
<b>Removal of Deep Soil–SX Tank Farm (CLO_REMSXX)</b>							
Radiological workers	896,000	2035	2042	8	112,000	54	
Nonradiological workers							117
On site	1,040,000	2035	2042	8	130,000	63	
Off site	N/A						
<b>Preprocessing Facility Construction (CLO_CONPPF)</b>							
Radiological workers	N/A						
Nonradiological workers							2,390
On site	14,900,000	2020	2022	3	4,970,000	2,390	
Off site	5,040,000	2020	2022	3	1,680,000	808	
<b>Preprocessing Facility Operations (CLO_OPSPPF)</b>							
Radiological workers	8,330,000	2023	2099	77	108,000	52	
Nonradiological workers							54
On site	256,000	2023	2099	77	3,320	2	
Off site	N/A						
<b>Preprocessing Facility Deactivation (CLO_DEAPPF)</b>							
Radiological workers	108,000	2100	2100	1	108,000	52	
Nonradiological workers							54
On site	3,330	2100	2100	1	3,330	2	
Off site	N/A						
<b>Total</b>	<b>54,800,000</b>				<b>10,000,000</b>	<b>4,850</b>	<b>4,040</b>

<sup>a</sup> Containment Structure construction activities would occur over three 4-year periods.  
 Period 1, 2019–2022  
 Period 2, 2046–2049  
 Period 3, 2073–2076

**Table I-44. Tank Closure Alternative 6B, Base Case, Closure Rollup Workforce Estimate (continued)**

<sup>b</sup> Containment Structure deactivation activities would occur over five 3-year periods.

Period 1, 2043–2045

Period 2, 2062–2064

Period 3, 2070–2072

Period 4, 2089–2091

Period 5, 2097–2099

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 810.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**I.2.12 Tank Closure Alternative 6B: All Vitrification with Separations; Clean Closure–Option Case**

**Table I-45. Tank Closure Alternative 6B, Option Case, Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	12
Nonradiological workers							
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						381
Nonradiological workers							
Onsite construction	1,760,000	2011	2013	3	587,000	283	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						222
Nonradiological workers							
Onsite construction	3,120,000	2014	2024	11	284,000	137	
Onsite exempt	1,930,000	2014	2024	11	175,000	85	
Offsite design	2,360,000	2014	2024	11	215,000	104	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	45
Nonradiological workers							
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	104
Nonradiological workers							
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	

**Table I-45. Tank Closure Alternative 6B, Option Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	126,000	2009	2009	1	126,000	61	61
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	29,700,000	2006	2017	12	2,480,000	1,190	1,190
Off site	9,930,000	2006	2017	12	828,000	399	
<b>Additional Low-Activity Waste Melters (CON_LAW)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	7,060,000	2008	2017	10	706,000	340	340
Off site	2,390,000	2008	2017	10	239,000	115	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	1,580,000	2035	2038	4	395,000	190	190
Off site	466,000	2035	2038	4	117,000	57	
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	4,720,000	2013	2017	5	944,000	454	454
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	189,000	2013	2016	4	47,300	23	
Nonradiological workers							
On site	255,000	2013	2016	4	63,800	31	54
Off site	N/A						
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	21,700,000	2013	2043	31	700,000	337	
Nonradiological workers							
On site	24,000,000	2013	2043	31	774,000	373	710
Off site	12,900,000	2013	2043	31	416,000	200	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2013	2043	31	361,000	174	
Nonradiological workers							
On site	12,000,000	2013	2043	31	387,000	187	361
Off site	6,820,000	2013	2043	31	220,000	106	
<b>Chemical Wash System (CON_CHW)</b>							
Radiological workers	2,380,000	2013	2043	31	76,800	37	
Nonradiological workers							
On site	472,000	2013	2043	31	15,200	8	45
Off site	635,000	2013	2043	31	20,500	10	

**Table I-45. Tank Closure Alternative 6B, Option Case, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)<sup>a</sup></b>							
Radiological workers	N/A						
Nonradiological workers							
On site	5,620	2015	2030	4	1,410	1	1
Off site	N/A						
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	2,050,000	2023	2025	3	683,000	329	329
Off site	704,000	2023	2025	3	235,000	113	
<b>Effluent Treatment Facility Replacement (CON ETFU)<sup>b</sup></b>							
Radiological workers	N/A						
Nonradiological workers							
On site	4,090,000	2053	2085	6	682,000	328	328
Off site	736,000	2053	2085	6	123,000	60	
<b>242-A Evaporator Replacement (CON EVA)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	635,000	2015	2017	3	212,000	102	102
Off site	218,000	2015	2017	3	72,700	35	
<b>Immobilized Low-Activity Waste Interim Storage Facility (CON_ILAWST)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	603,000	2016	2043	28	21,500	11	11
Off site	N/A						
<b>High-Level Radioactive Waste Debris Storage Facilities (CON_HLWST)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	577,000	2021	2090	70	8,240	4	4
Off site	N/A						
<b>Total</b>	<b>180,000,000</b>				<b>13,400,000</b>	<b>6,480</b>	<b>4,940</b>

<sup>a</sup> High-Level Radioactive Waste Melter Interim Storage Facilities construction activities would occur over two 2-year construction periods.  
Period 1, 2015–2016  
Period 2, 2029–2030

<sup>b</sup> Replacement Effluent Treatment Facility construction activities would occur over two 3-year construction periods.  
Period 1, 2053–2055  
Period 2, 2083–2085

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,540.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-46. Tank Closure Alternative 6B, Option Case, Operations Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	3,650,000	2018	2040	23	159,000	77	120
Nonradiological workers							
On site	2,040,000	2018	2040	23	88,700	43	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	44,900	2006	2043	38	1,180	1	4
Nonradiological workers							
On site	165,000	2006	2043	38	4,340	3	
Off site	117,000	2006	2043	38	3,080	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	9,880,000	2006	2043	38	260,000	125	650
Nonradiological workers							
On site	41,500,000	2006	2043	38	1,090,000	525	
Off site	5,890,000	2006	2043	38	155,000	75	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,390,000	2006	2043	38	36,600	18	44
Nonradiological workers							
On site	2,000,000	2006	2043	38	52,600	26	
Off site	2,200,000	2006	2043	38	57,900	28	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	13,000	2006	2043	38	342	1	28
Nonradiological workers							
On site	2,110,000	2006	2043	38	55,500	27	
Off site	16,400	2006	2043	38	432	1	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	62,800,000	2018	2043	26	2,420,000	1,160	1,940
Nonradiological workers							
On site	42,100,000	2018	2043	26	1,620,000	779	
Off site	8,000	2018	2043	26	308	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,410,000	2040	2040	1	2,410,000	1,160	1,940
Nonradiological workers							
On site	1,620,000	2040	2040	1	1,620,000	779	
Off site	308	2040	2040	1	308	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2039	2040	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	13,900,000	2013	2043	31	448,000	216	412
Nonradiological workers							
On site	12,600,000	2013	2043	31	406,000	196	
Off site	N/A						

**Table I-46. Tank Closure Alternative 6B, Option Case, Operations Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2013	2043	31	247,000	119	227
Nonradiological workers							
On site	6,940,000	2013	2043	31	224,000	108	
Off site	N/A						
<b>Chemical Wash System (OPS_CHW)</b>							
Radiological workers	10,800,000	2013	2043	31	348,000	168	320
Nonradiological workers							
On site	9,750,000	2013	2043	31	315,000	152	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2199	182	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	14,700,000	2006	2100	95	155,000	75	94
Nonradiological workers							
On site	3,670,000	2006	2100	95	38,600	19	
Off site	N/A						
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,860,000	2006	2043	38	48,900	24	32
Nonradiological workers							
On site	568,000	2006	2043	38	14,900	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						43
Nonradiological workers							
On site	8,670,000	2006	2102	97	89,400	43	
Off site	N/A						
<b>Immobilized Low-Activity Waste Interim Storage Facility (OPS_ILAWST)</b>							
Radiological workers	N/A	2018	2043	26	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>High-Level Radioactive Waste Debris Storage Facilities (OPS_HLWST)</b>							
Radiological workers	N/A	2023	2088	66	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Total</b>	<b>271,000,000</b>				<b>12,400,000</b>	<b>5,990</b>	<b>5,880</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 110.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.

**Table I-47. Tank Closure Alternative 6B, Option Case, Deactivation Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	160	2041	2041	1	160	1	
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	3,800,000	2044	2045	2	1,900,000	914	
Nonradiological workers							1,530
On site	2,550,000	2044	2045	2	1,280,000	616	
Off site	500	2044	2045	2	250	1	
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	1,820,000	2013	2043	31	58,700	29	
Nonradiological workers							29
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2013	2043	31	8,320	4	
Nonradiological workers							4
On site	N/A						
Off site	N/A						
<b>Chemical Wash System (DEA_CHW)</b>							
Radiological workers	144,000	2013	2043	31	4,650	3	
Nonradiological workers							3
On site	N/A						
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2041	2041	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (DEA ETF)<sup>a</sup></b>							
Radiological workers	309,000	2026	2101	4	77,300	38	
Nonradiological workers							48
On site	77,300	2026	2101	4	19,300	10	
Off site	N/A						
<b>Packaged HLW Debris Storage Facility (DEA_HLWST)</b>							
Radiological workers	N/A	2089	2089	1			
Nonradiological workers							1
On site	35	2089	2089	1	35	1	
Off site	N/A	2089	2089	1			
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	
Nonradiological workers							16
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						

**Table I-47. Tank Closure Alternative 6B, Option Case, Deactivation Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2044	2044	1	24,400	12	
Nonradiological workers							16
On site	7,480	2044	2044	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>9,050,000</b>				<b>3,440,000</b>	<b>1,660</b>	<b>1,660</b>

<sup>a</sup> Replacement Effluent Treatment Facility deactivation activities would occur over four 1-year periods.

Period 1, 2026–2026

Period 2, 2056–2056

Period 3, 2086–2086

Period 4, 2101–2101

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** HLW=high-level radioactive waste; N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-48. Tank Closure Alternative 6B, Option Case, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Containment Structure Construction (CLO_CONCS1) Three 4-Year Construction Periods<sup>a</sup></b>							
Radiological workers	12,000	2019	2076	12	1,000	1	
Nonradiological workers							6
On site	120,000	2019	2076	12	10,000	5	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS1) Five 3-Year Deactivation Periods<sup>b</sup></b>							
Radiological workers	12,000	2043	2099	15	800	1	
Nonradiological workers							5
On site	120,000	2043	2099	15	8,000	4	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	
Nonradiological workers							9
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Removal of B Tank Farm (CLO_REMTB)</b>							
Radiological workers	693,000	2023	2034	12	57,800	28	
Nonradiological workers							73
On site	1,100,000	2023	2034	12	91,700	45	
Off site	N/A						

**Table I-48. Tank Closure Alternative 6B, Option Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of T Tank Farm (CLO_REMTT)</b>							
Radiological workers	693,000	2077	2088	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2077	2088	12	91,700	45	
Off site	N/A						
<b>Removal of BY Tank Farm (CLO_REMTBY)</b>							
Radiological workers	520,000	2050	2061	12	43,300	21	55
Nonradiological workers							
On site	824,000	2050	2061	12	68,700	34	
Off site	N/A						
<b>Removal of BX Tank Farm (CLO_REMTBX)</b>							
Radiological workers	520,000	2023	2034	12	43,300	21	55
Nonradiological workers							
On site	824,000	2023	2034	12	68,700	34	
Off site	N/A						
<b>Removal of C Tank Farm (CLO_REMTC)</b>							
Radiological workers	693,000	2050	2061	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2050	2061	12	91,700	45	
Off site	N/A						
<b>Removal of A Tank Farm (CLO_REMTA)</b>							
Radiological workers	260,000	2077	2088	12	21,700	11	28
Nonradiological workers							
On site	412,000	2077	2088	12	34,300	17	
Off site	N/A						
<b>Removal of AX Tank Farm (CLO_REMTAX)</b>							
Radiological workers	173,000	2077	2088	12	14,400	7	19
Nonradiological workers							
On site	275,000	2077	2088	12	22,900	12	
Off site	N/A						
<b>Removal of S Tank Farm (CLO_REMTS)</b>							
Radiological workers	520,000	2077	2088	12	43,300	21	55
Nonradiological workers							
On site	824,000	2077	2088	12	68,700	34	
Off site	N/A						
<b>Removal of TY Tank Farm (CLO_REMTTY)</b>							
Radiological workers	260,000	2050	2061	12	21,700	11	28
Nonradiological workers							
On site	412,000	2050	2061	12	34,300	17	
Off site	N/A						
<b>Removal of TX Tank Farm (CLO_REMTTX)</b>							
Radiological workers	779,000	2050	2061	12	64,900	32	82
Nonradiological workers							
On site	1,240,000	2050	2061	12	103,000	50	
Off site	N/A						

**Table I-48. Tank Closure Alternative 6B, Option Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of U Tank Farm (CLO_REMTU)</b>							
Radiological workers	693,000	2023	2034	12	57,800	28	73
Nonradiological workers							
On site	1,100,000	2023	2034	12	91,700	45	
Off site	N/A						
<b>Removal of SX Tank Farm (CLO_REMTSX)</b>							
Radiological workers	649,000	2023	2034	12	54,100	27	69
Nonradiological workers							
On site	1,030,000	2023	2034	12	85,800	42	
Off site	N/A						
<b>Removal of Deep Soil-B Tank Farm (CLO_REMSB)</b>							
Radiological workers	73,400	2035	2042	8	9,180	5	11
Nonradiological workers							
On site	84,900	2035	2042	8	10,600	6	
Off site	N/A						
<b>Removal of Deep Soil-T Tank Farm (CLO_REMST)</b>							
Radiological workers	564,000	2089	2096	8	70,500	34	74
Nonradiological workers							
On site	652,000	2089	2096	8	81,500	40	
Off site	N/A						
<b>Removal of Deep Soil-BX Tank Farm (CLO_REMSBX)</b>							
Radiological workers	293,000	2035	2042	8	36,600	18	39
Nonradiological workers							
On site	339,000	2035	2042	8	42,400	21	
Off site	N/A						
<b>Removal of Deep Soil-C Tank Farm (CLO_REMSC)</b>							
Radiological workers	4,450	2062	2069	8	556	1	2
Nonradiological workers							
On site	5,140	2062	2069	8	643	1	
Off site	N/A						
<b>Removal of Deep Soil-A Tank Farm (CLO_REMSA)</b>							
Radiological workers	13,300	2089	2096	8	1,660	1	2
Nonradiological workers							
On site	15,400	2089	2096	8	1,930	1	
Off site	N/A						
<b>Removal of Deep Soil-AX Tank Farm (CLO_REMSAX)</b>							
Radiological workers	222,000	2089	2096	8	27,800	14	30
Nonradiological workers							
On site	257,000	2089	2096	8	32,100	16	
Off site	N/A						
<b>Removal of Deep Soil-TX Tank Farm (CLO_REMSTX)</b>							
Radiological workers	701,000	2062	2069	8	87,600	43	92
Nonradiological workers							
On site	810,000	2062	2069	8	101,000	49	
Off site	N/A						

**Table I-48. Tank Closure Alternative 6B, Option Case, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Removal of Deep Soil–U Tank Farm (CLO_REMSU)</b>							
Radiological workers	367,000	2035	2042	8	45,900	23	49
Nonradiological workers							
On site	424,000	2035	2042	8	53,000	26	
Off site	N/A						
<b>Removal of Deep Soil–SX Tank Farm (CLO_REMSSX)</b>							
Radiological workers	896,000	2035	2042	8	112,000	54	117
Nonradiological workers							
On site	1,040,000	2035	2042	8	130,000	63	
Off site	N/A						
<b>Clean Closure of B Area Cribs and Trenches (Ditches) (CLO_REMBC&amp;T)</b>							
Radiological workers	4,000,000	2035	2061	27	148,000	72	155
Nonradiological workers							
On site	4,630,000	2035	2061	27	171,000	83	
Off site	N/A						
<b>Clean Closure of T Area Cribs and Trenches (Ditches) (CLO_REMTC&amp;T)</b>							
Radiological workers	4,000,000	2062	2096	35	114,000	55	119
Nonradiological workers							
On site	4,630,000	2062	2096	35	132,000	64	
Off site	N/A						
<b>Containment Structure Construction–B and T Area Cribs and Trenches (Ditches) (CLO_CONCS2)<sup>c</sup></b>							
Radiological workers	4,000	2029	2059	8	500	1	4
Nonradiological workers							
On site	40,000	2029	2059	8	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation–T Area Cribs and Trenches (Ditches) (CLO_DEACS2)<sup>d</sup></b>							
Radiological workers	4,000	2062	2099	6	667	1	5
Nonradiological workers							
On site	40,000	2062	2099	6	6,670	4	
Off site	N/A						
<b>Preprocessing Facility Construction (CLO_CONPPF)</b>							
Radiological workers	N/A						4,780
Nonradiological workers							
On site	29,800,000	2020	2022	3	9,930,000	4,780	
Off site	10,100,000	2020	2022	3	3,370,000	1,620	
<b>Preprocessing Facility Operations (CLO_OPSPPF)</b>							
Radiological workers	29,300,000	2023	2099	77	381,000	184	190
Nonradiological workers							
On site	901,000	2023	2099	77	11,700	6	
Off site	N/A						

**Table I-48. Tank Closure Alternative 6B, Option Case, Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Preprocessing Facility Deactivation (CLO_DEAPPF)</b>							
Radiological workers	380,000	2100	2100	1	380,000	183	
Nonradiological workers							189
On site	11,700	2100	2100	1	11,700	6	
Off site	N/A						
<b>Total</b>	<b>112,000,000</b>				<b>16,900,000</b>	<b>8,190</b>	<b>6,560</b>

<sup>a</sup> Tank Farm Containment Structure construction activities would occur over three 4-year periods.

Period 1, 2019–2022

Period 2, 2046–2049

Period 3, 2073–2076

<sup>b</sup> Tank Farm Containment Structure deactivation activities would occur over five 3-year periods.

Period 1, 2043–2045

Period 2, 2062–2064

Period 3, 2070–2072

Period 4, 2089–2091

Period 5, 2097–2099

<sup>c</sup> B and T Area cribs and trenches (ditches) Containment Structure construction activities would occur over two 4-year periods.

Period 1, 2029–2032

Period 2, 2056–2059

<sup>d</sup> T Area cribs and trenches (ditches) Containment Structure deactivation activities would occur over two 3-year periods.

Period 1, 2062–2064

Period 2, 2097–2099

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,630.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

### I.2.13 Tank Closure Alternative 6C: All Vitrification with Separations; Landfill Closure

**Table I-49. Tank Closure Alternative 6C Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Canister Storage Building (CON_CSB)</b>							
Radiological workers	116,000	2006	2016	11	10,500	6	
Nonradiological workers							12
On site	136,000	2006	2016	11	12,400	6	
Off site	50,300	2006	2016	11	4,570	3	
<b>Immobilized High-Level Radioactive Waste Shipping/Transfer Facility (CON_STF)</b>							
Radiological workers	N/A						
Nonradiological workers							381
Onsite construction	1,760,000	2011	2013	3	587,000	283	
Onsite exempt	610,000	2011	2013	3	203,000	98	
Offsite design	748,000	2011	2013	3	249,000	120	

**Table I-49. Tank Closure Alternative 6C Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Modules (CON_ISM)</b>							
Radiological workers	N/A						
Nonradiological workers							
Onsite construction	3,120,000	2014	2024	11	284,000	137	222
Onsite exempt	1,930,000	2014	2024	11	175,000	85	
Offsite design	2,360,000	2014	2024	11	215,000	104	
<b>Other Infrastructure Upgrades (CON_OIU)</b>							
Radiological workers	782,000	2006	2034	29	27,000	13	
Nonradiological workers							45
On site	1,920,000	2006	2034	29	66,200	32	
Off site	743,000	2006	2034	29	25,600	13	
<b>Tank Upgrades (CON_TU)</b>							
Radiological workers	1,200,000	2006	2025	20	60,000	29	
Nonradiological workers							104
On site	3,110,000	2006	2025	20	156,000	75	
Off site	1,180,000	2006	2025	20	59,000	29	
<b>Underground Transfer Lines (CON_UTL)</b>							
Radiological workers	N/A						
Nonradiological workers							61
On site	126,000	2009	2009	1	126,000	61	
Off site	17,400	2009	2009	1	17,400	9	
<b>Waste Treatment Plant (CON_WTP)</b>							
Radiological workers	N/A						
Nonradiological workers							1,190
On site	29,700,000	2006	2017	12	2,480,000	1,190	
Off site	9,930,000	2006	2017	12	828,000	399	
<b>Additional Low-Activity Waste Melters (CON_LAW)</b>							
Radiological workers	N/A						
Nonradiological workers							340
On site	7,060,000	2008	2017	10	706,000	340	
Off site	2,390,000	2008	2017	10	239,000	115	
<b>Cesium and Strontium Capsule Processing Facility (CON_CSC)</b>							
Radiological workers	N/A						
Nonradiological workers							190
On site	1,580,000	2035	2038	4	395,000	190	
Off site	466,000	2035	2038	4	117,000	57	
<b>Waste Receiver Facilities (CON_WRF)</b>							
Radiological workers	N/A						
Nonradiological workers							454
On site	4,720,000	2013	2017	5	944,000	454	
Off site	1,700,000	2013	2017	5	340,000	164	
<b>Tank Risers (CON_RIS)</b>							
Radiological workers	173,000	2013	2016	4	43,300	21	
Nonradiological workers							50
On site	233,000	2013	2016	4	58,300	29	
Off site	N/A						

**Table I-49. Tank Closure Alternative 6C Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Modified Sluicing Retrieval System (CON_MS)</b>							
Radiological workers	3,850,000	2013	2043	31	124,000	60	155
Nonradiological workers							
On site	6,080,000	2013	2043	31	196,000	95	
Off site	2,140,000	2013	2043	31	69,000	34	
<b>Mobile Retrieval System (CON_MRS)</b>							
Radiological workers	8,100,000	2013	2028	16	506,000	244	513
Nonradiological workers							
On site	8,940,000	2013	2028	16	559,000	269	
Off site	4,790,000	2013	2028	16	299,000	144	
<b>Vacuum-Based Retrieval System (CON_VBR)</b>							
Radiological workers	11,200,000	2029	2043	15	747,000	360	745
Nonradiological workers							
On site	12,000,000	2029	2043	15	800,000	385	
Off site	6,820,000	2029	2043	15	455,000	219	
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (CON_PAD)<sup>a</sup></b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	5,620	2015	2030	4	1,410	1	
Off site	N/A						
<b>Effluent Treatment Facility Replacement (CON ETF)</b>							
Radiological workers	N/A						329
Nonradiological workers							
On site	2,050,000	2023	2025	3	683,000	329	
Off site	704,000	2023	2025	3	235,000	113	
<b>242-A Evaporator Replacement (CON_EVA)</b>							
Radiological workers	N/A						102
Nonradiological workers							
On site	635,000	2015	2017	3	212,000	102	
Off site	218,000	2015	2017	3	72,700	35	
<b>Immobilized Low-Activity Waste Interim Storage Facility (CON_ILAWST)</b>							
Radiological workers	N/A						11
Nonradiological workers							
On site	603,000	2016	2043	28	21,500	11	
Off site	N/A						
<b>Total</b>	<b>146,000,000</b>				<b>13,400,000</b>	<b>6,460</b>	<b>4,910</b>

<sup>a</sup> High-Level Radioactive Waste Melter Interim Storage Facilities construction activities would occur over two 2-year periods.

Period 1, 2015–2016

Period 2, 2029–2030

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 1,550.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**Table I-50. Tank Closure Alternative 6C Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (OPS_ISF)</b>							
Radiological workers	3,650,000	2018	2040	23	159,000	77	120
Nonradiological workers							
On site	2,040,000	2018	2040	23	88,700	43	
Off site	N/A						
<b>Other Infrastructure Upgrades (OPS_OIU)</b>							
Radiological workers	44,900	2006	2043	38	1,180	1	4
Nonradiological workers							
On site	165,000	2006	2043	38	4,340	3	
Off site	117,000	2006	2043	38	3,080	2	
<b>Routine Operations (OPS_ROUT)</b>							
Radiological workers	9,880,000	2006	2043	38	260,000	125	650
Nonradiological workers							
On site	41,500,000	2006	2043	38	1,090,000	525	
Off site	5,890,000	2006	2043	38	155,000	75	
<b>Retrieval Operations (OPS_RET)</b>							
Radiological workers	13,000	2006	2043	38	342	1	28
Nonradiological workers							
On site	2,110,000	2006	2043	38	55,500	27	
Off site	16,400	2006	2043	38	432	1	
<b>Interim Stabilization/Double-Shell Tanks (OPS_IST)</b>							
Radiological workers	1,390,000	2006	2043	38	36,600	18	44
Nonradiological workers							
On site	2,000,000	2006	2043	38	52,600	26	
Off site	2,200,000	2006	2043	38	57,900	28	
<b>Waste Treatment Plant (OPS_WTP)</b>							
Radiological workers	62,800,000	2018	2043	26	2,420,000	1,160	1,940
Nonradiological workers							
On site	42,100,000	2018	2043	26	1,620,000	779	
Off site	8,000	2018	2043	26	308	1	
<b>Waste Treatment Plant—Cesium and Strontium Capsules (OPS_WTPCSC)</b>							
Radiological workers	2,410,000	2040	2040	1	2,410,000	1,160	1,940
Nonradiological workers							
On site	1,620,000	2040	2040	1	1,620,000	779	
Off site	308	2040	2040	1	308	1	
<b>Cesium and Strontium Capsule Processing Facility (OPS_CSC)</b>							
Radiological workers	103,000	2039	2040	2	51,500	25	25
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Modified Sluicing Retrieval System (OPS_MS)</b>							
Radiological workers	5,780,000	2013	2043	31	186,000	90	149
Nonradiological workers							
On site	3,780,000	2013	2043	31	122,000	59	
Off site	N/A						

Table I-50. Tank Closure Alternative 6C Operations Rollup Workforce Estimate (continued)

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Mobile Retrieval System (OPS_MRS)</b>							
Radiological workers	5,170,000	2013	2028	16	323,000	156	297
Nonradiological workers							
On site	4,680,000	2013	2028	16	293,000	141	
Off site	N/A						
<b>Vacuum-Based Retrieval System (OPS_VBR)</b>							
Radiological workers	7,670,000	2029	2043	15	511,000	246	469
Nonradiological workers							
On site	6,940,000	2029	2043	15	463,000	223	
Off site	N/A						
<b>High-Level Radioactive Waste Melter Interim Storage Facilities (OPS_PAD)</b>							
Radiological workers	N/A	2018	2145	128	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility Replacement (OPS ETF)</b>							
Radiological workers	6,180,000	2006	2045	40	155,000	75	94
Nonradiological workers							
On site	1,550,000	2006	2045	40	38,800	19	
Off site	N/A						
<b>242-A Evaporator Replacement (OPS_EVA)</b>							
Radiological workers	1,860,000	2006	2043	38	48,900	24	32
Nonradiological workers							
On site	568,000	2006	2043	38	14,900	8	
Off site	N/A						
<b>Borrow Area C (OPS_CAREA)</b>							
Radiological workers	N/A						43
Nonradiological workers							
On site	4,200,000	2006	2052	47	89,400	43	
Off site	N/A						
<b>Immobilized Low-Activity Waste Interim Storage Facility (OPS_ILAWST)</b>							
Radiological workers	N/A	2018	2043	26	N/A	0	0
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Total</b>	<b>228,000,000</b>				<b>12,300,000</b>	<b>5,940</b>	<b>5,840</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 100.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.

**Table I-51. Tank Closure Alternative 6C Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Immobilized High-Level Radioactive Waste Interim Storage Facilities (DEA_ISF)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	160	2041	2041	1	160	1	
Off site	N/A						
<b>Waste Treatment Plant (DEA_WTP)</b>							
Radiological workers	3,800,000	2044	2045	2	1,900,000	914	
Nonradiological workers							1,530
On site	2,550,000	2044	2045	2	1,280,000	616	
Off site	500	2044	2045	2	250	1	
<b>Modified Sluicing Retrieval System (DEA_MS)</b>							
Radiological workers	291,000	2013	2043	31	9,390	5	
Nonradiological workers							5
On site	N/A						
Off site	N/A						
<b>Mobile Retrieval System (DEA_MRS)</b>							
Radiological workers	680,000	2013	2028	16	42,500	21	
Nonradiological workers							21
On site	N/A						
Off site	N/A						
<b>Vacuum-Based Retrieval System (DEA_VBR)</b>							
Radiological workers	258,000	2029	2043	15	17,200	9	
Nonradiological workers							9
On site	N/A						
Off site	N/A						
<b>Cesium and Strontium Capsule Processing Facility (DEA_CSC)</b>							
Radiological workers	23,900	2041	2041	1	23,900	12	
Nonradiological workers							12
On site	N/A						
Off site	N/A						
<b>Effluent Treatment Facility (Original) (DEA_ETFO)</b>							
Radiological workers	77,300	2026	2026	1	77,300	38	
Nonradiological workers							48
On site	19,300	2026	2026	1	19,300	10	
Off site	N/A						
<b>Effluent Treatment Facility (DEA ETF)</b>							
Radiological workers	77,300	2046	2046	1	77,300	38	
Nonradiological workers							48
On site	19,300	2046	2046	1	19,300	10	
Off site	N/A						
<b>242-A Evaporator (Original) (DEA_EVAO)</b>							
Radiological workers	24,400	2018	2018	1	24,400	12	
Nonradiological workers							16
On site	7,480	2018	2018	1	7,480	4	
Off site	N/A						

**Table I-51. Tank Closure Alternative 6C Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>242-A Evaporator Replacement (DEA_EVA)</b>							
Radiological workers	24,400	2044	2044	1	24,400	12	16
Nonradiological workers							
On site	7,480	2044	2044	1	7,480	4	
Off site	N/A						
<b>Total</b>	<b>7,860,000</b>				<b>3,530,000</b>	<b>1,710</b>	<b>1,710</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010a.**Table I-52. Tank Closure Alternative 6C Closure Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Tank-Filling Grout Facility Construction (CLO_CONGRO)</b>							
Radiological workers	480	2032	2033	2	240	1	5
Nonradiological workers							
On site	13,400	2032	2033	2	6,700	4	
Off site	4,160	2032	2033	2	2,080	1	
<b>Tank-Filling Grout Facility Operations (CLO_OPSGRO)</b>							
Radiological workers	68,000	2034	2043	10	6,800	4	13
Nonradiological workers							
On site	185,000	2034	2043	10	18,500	9	
Off site	130,000	2034	2043	10	13,000	7	
<b>Tank-Filling Grout Facility Deactivation (CLO_DEAGRO)</b>							
Radiological workers	480	2044	2044	1	480	1	4
Nonradiological workers							
On site	4,320	2044	2044	1	4,320	3	
Off site	1,040	2044	2044	1	1,040	1	
<b>Ancillary Equipment Grouting (CLO_ANCFIL)</b>							
Radiological workers	338,000	2013	2037	25	13,500	7	7
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Ancillary Equipment Removal (CLO_ANCREM)</b>							
Radiological workers	166,000	2032	2037	6	27,700	14	14
Nonradiological workers							
On site	N/A						
Off site	N/A						

**Table I-52. Tank Closure Alternative 6C Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>BX and SX Tank Farm Soil Removal (CLO_SOIL)</b>							
Radiological workers	33,000	2032	2037	6	5,500	3	
Nonradiological workers							6
On site	30,000	2032	2037	6	5,000	3	
Off site	N/A						
<b>Containment Structure Construction (CLO_CONCS)</b>							
Radiological workers	2,000	2028	2031	4	500	1	
Nonradiological workers							4
On site	20,000	2028	2031	4	5,000	3	
Off site	N/A						
<b>Containment Structure Deactivation (CLO_DEACS)</b>							
Radiological workers	2,000	2038	2040	3	667	1	
Nonradiological workers							5
On site	20,000	2038	2040	3	6,670	4	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier Construction (CLO_RCRA)</b>							
Radiological workers	1,430,000	2039	2045	7	204,000	99	
Nonradiological workers							394
On site	4,290,000	2039	2045	7	613,000	295	
Off site	N/A						
<b>Decontamination and Decommissioning of 10 Selected Facilities (CLO_D&amp;DTEN)</b>							
Radiological workers	44,400	2018	2028	11	4,040	2	
Nonradiological workers							9
On site	147,000	2018	2028	11	13,400	7	
Off site	79,000	2018	2028	11	7,180	4	
<b>Postclosure Care (CLO_POST)</b>							
Radiological workers	N/A						
Nonradiological workers							3
On site	471,000	2046	2145	100	4,710	3	
Off site	N/A						
<b>Total</b>	<b>7,480,000</b>				<b>964,000</b>	<b>477</b>	<b>464</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 13.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010a.

**I.2.14 FFTF Decommissioning Alternative 1: No Action****Table I–53. FFTF Decommissioning Alternative 1 Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Administrative Controls (DEA_ADM)</b>							
Radiological workers	41,600	2008	2107	100	416	1	
Nonradiological workers							1
On site	N/A						
Off site	N/A						
<b>Total</b>	<b>41,600</b>				<b>416</b>	<b>1</b>	<b>1</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** FFTF=Fast Flux Test Facility; N/A=not applicable.**Source:** Compiled from SAIC 2010b.**I.2.15 FFTF Decommissioning Alternative 2: Entombment****Table I–54. FFTF Decommissioning Alternative 2, Facility Disposition, Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Above-Grade Structure and Equipment Removal (DEC_AGSR)</b>							
Radiological workers	N/A						
Nonradiological workers							33
On site	546,000	2013	2020	8	68,300	33	
Off site	20,000	2013	2020	8	2,500	2	
<b>Removal of Reactor Containment Building Below-Grade Vessels, Piping, Components (DEC_GB1)</b>							
Radiological workers	7,680	2017	2017	1	7,680	4	
Nonradiological workers							6
On site	3,840	2017	2017	1	3,840	2	
Off site	N/A						
<b>491 East and West Backfill with Grout (DEC_GB2)</b>							
Radiological workers	N/A	2017	2017	1	N/A	0	
Nonradiological workers							0
On site	N/A						
Off site	N/A						
<b>Grout Facility Resource Calculation (DEC_OGFC)</b>							
Radiological workers	N/A						
Nonradiological workers							11
On site	22,400	2016	2016	1	22,400	11	
Off site	N/A						
<b>Grout Facility Resource Calculation–Operation (DEC_OGFO)</b>							
Radiological workers	N/A						
Nonradiological workers							6
On site	10,600	2017	2017	1	10,600	6	
Off site	N/A						

**Table I-54. FFTF Decommissioning Alternative 2, Facility Disposition, Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Grout Facility Resource Calculation–Deactivation (DEC_OGFD)</b>							
Radiological workers	N/A						
Nonradiological workers							4
On site	7,210	2018	2018	1	7,210	4	
Off site	N/A						
<b>Nonhazardous Waste Transportation (DEC_WTR)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	95	2013	2020	8	12	1	
Off site	9	2013	2020	8	1	1	
<b>Site Regrading (CLO_SRG)</b>							
Radiological workers	N/A						
Nonradiological workers							22
On site	45,200	2021	2021	1	45,200	22	
Off site	4,520	2021	2021	1	4,520	3	
<b>Site Revegetation (CLO_REV)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	942	2021	2021	1	942	1	
Off site	94	2021	2021	1	94	1	
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RCRA)</b>							
Radiological workers	N/A						
Nonradiological workers							27
On site	55,700	2021	2021	1	55,700	27	
Off site	5,570	2021	2021	1	5,570	3	
<b>Institutional Controls (CLO_POST)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	80,000	2022	2121	100	800	1	
Off site	N/A						
<b>Total</b>	<b>810,000</b>				<b>235,000</b>	<b>122</b>	<b>112</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 10.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** FFTF=Fast Flux Test Facility; N/A=not applicable.

**Source:** Compiled from SAIC 2010b.

## I.2.16 FTF Decommissioning Alternative 3: Removal

Table I-55. FTF Decommissioning Alternative 3, Facility Disposition, Rollup Workforce Estimate

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Above-Grade Structure and Equipment Removal (DEC_AGSR)</b>							
Radiological workers	N/A						
Nonradiological workers							33
On site	546,000	2013	2020	8	68,300	33	
Off site	20,000	2013	2020	8	2,500	2	
<b>Removal of Reactor Containment Building Below-Grade Vessels, Piping, Components (DEC_RVRG)</b>							
Radiological workers	131,000	2013	2014	2	65,500	32	
Nonradiological workers							48
On site	64,600	2013	2014	2	32,300	16	
Off site	N/A						
<b>Grout Facility Resource Calculation (DEC_OGFC)</b>							
Radiological workers	N/A						
Nonradiological workers							11
On site	22,400	2012	2012	1	22,400	11	
Off site	N/A						
<b>Grout Facility Resource Calculation–Operation (DEC_OGFO)</b>							
Radiological workers	N/A						
Nonradiological workers							3
On site	10,600	2013	2014	2	5,300	3	
Off site	N/A						
<b>Grout Facility Resource Calculation–Deactivation (DEC_OGFD)</b>							
Radiological workers	N/A						
Nonradiological workers							4
On site	7,210	2015	2015	1	7,210	4	
Off site	N/A						
<b>Nonhazardous Waste Transportation (DEC_WTR)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	95	2013	2020	8	12	1	
Off site	9	2013	2020	8	1	1	
<b>Site Regrading (CLO_SRG)</b>							
Radiological workers	N/A						
Nonradiological workers							30
On site	61,600	2021	2021	1	61,600	30	
Off site	6,160	2021	2021	1	6,160	3	
<b>Site Revegetation (CLO_REV)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	1,060	2021	2021	1	1,060	1	
Off site	106	2021	2021	1	106	1	

**Table I-55. FFTF Decommissioning Alternative 3, Facility Disposition, Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Institutional Controls (CLO_POST)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	80,000	2022	2121	100	800	1	1
Off site	N/A						
<b>Total</b>	<b>951,000</b>				<b>273,000</b>	<b>139</b>	<b>132</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 7.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** FFTF=Fast Flux Test Facility; N/A=not applicable.

**Source:** Compiled from SAIC 2010b.

**Table I-56. FFTF Decommissioning Alternatives 2 and 3, Disposition of Remote-Handled Special Components, Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>HANFORD OPTION</b>							
<b>Remote Treatment Project–Hanford 200-West Area (CON_H RTP)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	219,000	2015	2016	2	110,000	53	53
Off site	124,000	2015	2016	2	62,000	30	
<b>Remote Treatment Project–Hanford (OPS_H RTP)</b>							
Radiological workers	83,200	2017	2017	1	83,200	40	
Nonradiological workers							
On site	N/A						40
Off site	5	2017	2017	1	5	1	
<b>Remote Treatment Project–Hanford 200-West Area (DEA_H RTP)</b>							
Radiological workers	41,600	2018	2018	1	41,600	20	
Nonradiological workers							
On site	N/A						20
Off site	N/A						
<b>Total</b>	<b>468,000</b>				<b>297,000</b>	<b>144</b>	<b>113</b>
<b>IDAHO OPTION</b>							
<b>Remote Treatment Project–Idaho National Laboratory Materials and Fuels Complex (OPS_IRTP)</b>							
Radiological workers	83,200	2017	2017	1	83,200	40	
Nonradiological workers							
On site	N/A						40
Off site	87	2017	2017	1	87	1	

**Table I–56. FFTF Decommissioning Alternatives 2 and 3, Disposition of Remote-Handled Special Components, Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>IDAHO OPTION (continued)</b>							
<b>Remote Treatment Project–Idaho National Laboratory Materials and Fuels Complex (DEA_IRTP)</b>							
Radiological workers	41,600	2018	2018	1	41,600	20	
Nonradiological workers							20
On site	N/A						
Off site	N/A						
<b>Total</b>	<b>125,000</b>				<b>125,000</b>	<b>61</b>	<b>60</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents at Hanford = 31.

Total number of offsite full-time equivalents at Idaho National Laboratory = 1.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** FFTF=Fast Flux Test Facility; Hanford=Hanford Site; N/A=not applicable.**Source:** Compiled from SAIC 2010b.**Table I–57. FFTF Decommissioning Alternatives 2 and 3, Disposition of Bulk Sodium, Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>HANFORD REUSE OPTION</b>							
<b>Hanford Sodium Reaction Facility (CON_HSRF)</b>							
Radiological workers	N/A						
Nonradiological workers							44
On site	179,000	2015	2016	2	89,500	44	
Off site	87,000	2015	2016	2	43,500	21	
<b>Hanford Sodium Reaction Facility (OPS_HSP)</b>							
Radiological workers	10,400	2017	2017	1	10,400	5	
Nonradiological workers							5
On site	N/A						
Off site	N/A						
<b>Hanford Sodium Reaction Facility (OPS_HSRF)</b>							
Radiological workers	185,000	2017	2018	2	92,500	45	
Nonradiological workers							60
On site	61,800	2017	2018	2	30,900	15	
Off site	5,890	2017	2018	2	2,950	2	
<b>Hanford Sodium Reaction Facility (DEA_HSRF)</b>							
Radiological workers	11,000	2019	2019	1	11,000	6	
Nonradiological workers							18
On site	22,900	2019	2019	1	22,900	12	
Off site	16,400	2019	2019	1	16,400	8	
<b>Total</b>	<b>579,000</b>				<b>320,000</b>	<b>158</b>	<b>127</b>

**Table I–57. FFTF Decommissioning Alternatives 2 and 3, Disposition of Bulk Sodium, Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>IDAHO REUSE OPTION</b>							
<b>Materials and Fuels Complex Sodium Processing Facility (CON_ISPF)</b>							
Radiological workers	21,000	2014	2014	1	21,000	11	19
Nonradiological workers							
On site	15,600	2014	2014	1	15,600	8	
Off site	12,600	2014	2014	1	12,600	7	
<b>Idaho National Laboratory Materials and Fuels Complex–Sodium Processing Facility and Fast Flux Test Facility Sodium Storage Facility (OPS_ISP)</b>							
Radiological workers	10,400	2015	2015	1	10,400	5	5
Nonradiological workers							
On site	N/A						
Off site	N/A						
<b>Sodium Processing Facility (OPS_ISPF)</b>							
Radiological workers	169,000	2015	2016	2	84,500	41	50
Nonradiological workers							
On site	35,800	2015	2016	2	17,900	9	
Off site	N/A						
<b>Fast Flux Test Facility Sodium Disposition–Idaho Reuse Option (DEA_ISPF)</b>							
Radiological workers	828	2016	2016	1	828	1	2
Nonradiological workers							
On site	379	2016	2016	1	379	1	
Off site	N/A						
<b>Total</b>	<b>266,000</b>				<b>163,000</b>	<b>83</b>	<b>76</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents at Hanford = 31.

Total number of offsite full-time equivalents at Idaho National Laboratory = 7.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** FFTF=Fast Flux Test Facility; Hanford=Hanford Site; N/A=not applicable.

**Source:** Compiled from SAIC 2010b.

**I.2.17 Waste Management Alternative 1: No Action**

**Table I–58. Waste Management Alternative 1 Operations/Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Low-Level Radioactive Waste Burial Grounds (OPS_LLBG)</b>							
Radiological workers	387,000	2007	2035	29	13,300	7	9
Nonradiological workers							
On site	114,000	2007	2035	29	3,930	2	
Off site	194,000	2007	2035	29	6,690	4	
<b>Integrated Disposal Facility (DEA_IDF)</b>							
Radiological workers	6,240	2009	2009	1	6,240	3	100
Nonradiological workers							
On site	200,000	2009	2009	1	200,000	97	
Off site	31,200	2009	2009	1	31,200	15	

**Table I–58. Waste Management Alternative 1 Operations/Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Postclosure Care (DEA_ADM)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	72,700	2036	2135	100	727	1	1
Off site	N/A						
<b>Total</b>	<b>1,010,000</b>				<b>262,000</b>	<b>129</b>	<b>110</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 19.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**I.2.18 Waste Management Alternative 2: Disposal in IDF, 200-East Area Only****Table I–59. Waste Management Alternative 2 Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>A 2706T/TA/TB Facility (CON_TPLANT)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	78,500	2011	2012	2	39,300	19	19
Off site	31,000	2011	2012	2	15,500	8	
<b>Central Waste Complex (CON_WRAPCH)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	883,000	2011	2012	2	442,000	213	213
Off site	133,000	2011	2012	2	66,500	32	
<b>Waste Receiving and Processing Facility (CON_WRAPRH)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	1,480,000	2013	2018	6	247,000	119	119
Off site	509,000	2013	2018	6	84,800	41	
<b>Central Waste Complex (CON_CWCE)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	294,000	2011	2012	2	147,000	71	71
Off site	105,000	2011	2012	2	52,500	26	
<b>Total</b>	<b>3,510,000</b>				<b>1,090,000</b>	<b>529</b>	<b>422</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 107.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.

**Table I-60. Waste Management Alternative 2 Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>T Plant Solid Waste Activities (OPS_TPLANT)</b>							
Radiological workers	1,260,000	2013	2050	38	33,200	16	20
Nonradiological workers							
On site	316,000	2013	2050	38	8,320	4	
Off site	N/A						
<b>Solid Waste Operations Complex Waste Receiving and Processing Facility (OPS_WRAPCH)</b>							
Radiological workers	21,700,000	2013	2050	38	571,000	275	301
Nonradiological workers							
On site	1,980,000	2013	2050	38	52,100	26	
Off site	N/A						
<b>Solid Waste Operations Complex Waste Receiving and Processing Facility (OPS_WRAPRH)</b>							
Radiological workers	7,300,000	2019	2050	32	228,000	110	120
Nonradiological workers							
On site	666,000	2019	2050	32	20,800	10	
Off site	N/A						
<b>Central Waste Complex (OPS_CWCE)</b>							
Radiological workers	623,000	2013	2050	38	16,400	8	9
Nonradiological workers							
On site	69,200	2013	2050	38	1,820	1	
Off site	N/A						
<b>Total</b>	<b>33,900,000</b>				<b>932,000</b>	<b>450</b>	<b>450</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010c.

**Table I-61. Waste Management Alternative 2 Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>T Plant Solid Waste Activities (DEA_TPLANT)</b>							
Radiological workers	22,200	2051	2051	1	22,200	11	14
Nonradiological workers							
On site	5,550	2051	2051	1	5,550	3	
Off site	N/A						
<b>Solid Waste Operations Complex Waste Receiving and Processing Facility-Deactivation of the Contact-Handled Mixed Transuranic/Transuranic Waste Facility (DEA_WRAPCH)</b>							
Radiological workers	285,000	2051	2051	1	285,000	138	151
Nonradiological workers							
On site	26,000	2051	2051	1	26,000	13	
Off site	N/A						

**Table I–61. Waste Management Alternative 2 Deactivation Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Solid Waste Operations Complex Waste Receiving and Processing Facility–Remote-Handled Mixed Transuranic/Transuranic Waste Facility (DEA_WRAPRH)</b>							
Radiological workers	114,000	2051	2051	1	114,000	55	60
Nonradiological workers							
On site	10,400	2051	2051	1	10,400	5	
Off site	N/A						
<b>Central Waste Complex (DEA_CWCE)</b>							
Radiological workers	8,190	2051	2051	1	8,190	4	5
Nonradiological workers							
On site	911	2051	2051	1	911	1	
Off site	N/A						
<b>Total</b>	<b>472,000</b>				<b>472,000</b>	<b>230</b>	<b>230</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**Table I–62. Waste Management Alternative 2, Disposal Group 1, Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Single Integrated Disposal Facility (CON_IDF)</b>							
Radiological workers	N/A						160
Nonradiological workers							
On site	993,000	2006	2008	3	331,000	160	
Off site	N/A						
<b>River Protection Project Disposal Facility (CON_RPPDF)</b>							
Radiological workers	N/A						170
Nonradiological workers							
On site	1,060,000	2019	2021	3	353,000	170	
Off site	N/A						
<b>Total</b>	<b>2,050,000</b>				<b>684,000</b>	<b>330</b>	<b>330</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.

**Table I-63. Waste Management Alternative 2, Disposal Group 1, Operations Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Low-Level Radioactive Waste Burial Grounds (OPS_LLBG)</b>							
Radiological workers	587,000	2007	2050	44	13,300	7	9
Nonradiological workers							
On site	173,000	2007	2050	44	3,930	2	
Off site	294,000	2007	2050	44	6,680	4	
<b>Single Integrated Disposal Facility (OPS_IDF)</b>							
Radiological workers	1,510,000	2009	2050	42	36,000	18	42
Nonradiological workers							
On site	2,090,000	2009	2050	42	49,800	24	
Off site	2,790,000	2009	2050	42	66,400	32	
<b>River Protection Project Disposal Facility (OPS_RPPDF)</b>							
Radiological workers	1,660,000	2022	2050	29	57,200	28	43
Nonradiological workers							
On site	898,000	2022	2050	29	31,000	15	
Off site	1,660,000	2022	2050	29	57,200	28	
<b>Total</b>	<b>11,700,000</b>				<b>322,000</b>	<b>158</b>	<b>94</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 64.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Source:** Compiled from SAIC 2010c.

**Table I-64. Waste Management Alternative 2, Disposal Group 1, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_IDF)</b>							
Radiological workers	N/A						621
Nonradiological workers							
On site	2,570,000	2051	2052	2	1,290,000	621	
Off site	257,000	2051	2052	2	129,000	63	
<b>Postclosure Care (CLO_POSTIDF)</b>							
Radiological workers	N/A						2
Nonradiological workers							
On site	391,000	2053	2152	100	3,910	2	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RPPDF)</b>							
Radiological workers	N/A						558
Nonradiological workers							
On site	2,320,000	2051	2052	2	1,160,000	558	
Off site	232,000	2051	2052	2	116,000	56	

**Table I-64. Waste Management Alternative 2, Disposal Group 1, Closure Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Postclosure Care (CLO_POSTRPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	353,000	2053	2152	100	3,530	2	2
Off site	N/A						
<b>Total</b>	<b>6,120,000</b>				<b>2,700,000</b>	<b>1,300</b>	<b>1,180</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 120.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**Table I-65. Waste Management Alternative 2, Disposal Group 2, Construction Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Single Integrated Disposal Facility (CON_IDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	701,000	2006	2008	3	234,000	113	113
Off site	N/A						
<b>River Protection Project Disposal Facility (CON_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	8,190,000	2019	2021	3	2,730,000	1,310	1,310
Off site	N/A						
<b>Total</b>	<b>8,890,000</b>				<b>2,960,000</b>	<b>1,420</b>	<b>1,420</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**Table I-66. Waste Management Alternative 2, Disposal Group 2, Operations Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Low-Level Radioactive Waste Burial Grounds (OPS_LLBG)</b>							
Radiological workers	587,000	2007	2050	44	13,300	7	
Nonradiological workers							
On site	173,000	2007	2050	44	3,930	2	9
Off site	294,000	2007	2050	44	6,680	4	

**Table I-66. Waste Management Alternative 2, Disposal Group 2, Operations Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Single Integrated Disposal Facility (OPS_IDF)</b>							
Radiological workers	1,170,000	2009	2100	92	12,700	7	16
Nonradiological workers							
On site	1,620,000	2009	2100	92	17,600	9	
Off site	2,160,000	2009	2100	92	23,500	12	
<b>River Protection Project Disposal Facility (OPS_RPPDF)</b>							
Radiological workers	35,100,000	2022	2100	79	444,000	214	329
Nonradiological workers							
On site	18,900,000	2022	2100	79	239,000	115	
Off site	35,100,000	2022	2100	79	444,000	214	
<b>Total</b>	<b>95,100,000</b>				<b>1,200,000</b>	<b>584</b>	<b>354</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 230.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Source:** Compiled from SAIC 2010c.

**Table I-67. Waste Management Alternative 2, Disposal Group 2, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_IDF)</b>							
Radiological workers	N/A						219
Nonradiological workers							
On site	909,000	2101	2102	2	455,000	219	
Off site	90,900	2101	2102	2	45,500	22	
<b>Postclosure Care (CLO_POSTIDF)</b>							
Radiological workers	N/A						1
Nonradiological workers							
On site	138,000	2103	2202	100	1,380	1	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RPPDF)</b>							
Radiological workers	N/A						4,330
Nonradiological workers							
On site	18,000,000	2101	2102	2	9,000,000	4,330	
Off site	1,800,000	2101	2102	2	900,000	433	
<b>Postclosure Care (CLO_POSTRPPDF)</b>							
Radiological workers	N/A						14
Nonradiological workers							
On site	2,730,000	2103	2202	100	27,300	14	
Off site	N/A						
<b>Total</b>	<b>23,700,000</b>				<b>10,400,000</b>	<b>5,020</b>	<b>4,560</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 460.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010c.

**Table I–68. Waste Management Alternative 2, Disposal Group 3, Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Single Integrated Disposal Facility (CON_IDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	701,000	2006	2008	3	234,000	113	113
Off site	N/A						
<b>River Protection Project Disposal Facility (CON_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	8,190,000	2019	2021	3	2,730,000	1,310	1,310
Off site	N/A						
<b>Total</b>	<b>8,890,000</b>				<b>2,960,000</b>	<b>1,420</b>	<b>1,420</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**Table I–69. Waste Management Alternative 2, Disposal Group 3, Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Low-Level Radioactive Waste Burial Grounds (OPS_LLBG)</b>							
Radiological workers	587,000	2007	2050	44	13,300	7	
Nonradiological workers							9
On site	173,000	2007	2050	44	3,930	2	
Off site	294,000	2007	2050	44	6,680	4	
<b>Single Integrated Disposal Facility (OPS_IDF)</b>							
Radiological workers	2,000,000	2009	2165	157	12,700	7	
Nonradiological workers							16
On site	2,760,000	2009	2165	157	17,600	9	
Off site	3,680,000	2009	2165	157	23,400	12	
<b>River Protection Project Disposal Facility (OPS_RPPDF)</b>							
Radiological workers	64,100,000	2022	2165	144	445,000	214	
Nonradiological workers							330
On site	34,500,000	2022	2165	144	240,000	116	
Off site	64,100,000	2022	2165	144	445,000	214	
<b>Total</b>	<b>171,000,000</b>				<b>1,210,000</b>	<b>585</b>	<b>355</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 230.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Source:** Compiled from SAIC 2010c.

**Table I-70. Waste Management Alternative 2, Disposal Group 3, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_IDF)</b>							
Radiological workers	N/A						
Nonradiological workers							219
On site	909,000	2166	2167	2	455,000	219	
Off site	90,900	2166	2167	2	45,500	22	
<b>Postclosure Care (CLO_POSTIDF)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	138,000	2168	2267	100	1,380	1	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							4,330
On site	18,000,000	2166	2167	2	9,000,000	4,330	
Off site	1,800,000	2166	2167	2	900,000	433	
<b>Postclosure Care (CLO_POSTRPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							14
On site	2,730,000	2168	2267	100	27,300	14	
Off site	N/A						
<b>Total</b>	<b>23,700,000</b>				<b>10,400,000</b>	<b>5,020</b>	<b>4,560</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 460.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010c.

**I.2.19 Waste Management Alternative 3: Disposal in IDF, 200-East and 200-West Areas**

**Table I-71. Waste Management Alternative 3 Construction Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>A 2706T/TA/TB Facility (CON_TPLANT)</b>							
Radiological workers	N/A						
Nonradiological workers							19
On site	78,500	2011	2012	2	39,300	19	
Off site	31,000	2011	2012	2	15,500	8	
<b>Central Waste Complex (CON_WRAPCH)</b>							
Radiological workers	N/A						
Nonradiological workers							213
On site	883,000	2011	2012	2	442,000	213	
Off site	133,000	2011	2012	2	66,500	32	

**Table I-71. Waste Management Alternative 3 Construction Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Waste Receiving and Processing Facility (CON_WRAPRH)</b>							
Radiological workers	N/A						
Nonradiological workers							119
On site	1,480,000	2013	2018	6	247,000	119	
Off site	509,000	2013	2018	6	84,800	41	
<b>Central Waste Complex (CON_CWCE)</b>							
Radiological workers	N/A						
Nonradiological workers							71
On site	294,000	2011	2012	2	147,000	71	
Off site	105,000	2011	2012	2	52,500	26	
<b>Total</b>	<b>3,510,000</b>				<b>1,090,000</b>	<b>529</b>	<b>422</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 107.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**Table I-72. Waste Management Alternative 3 Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>T Plant Solid Waste Activities (OPS_TPLANT)</b>							
Radiological workers	1,260,000	2013	2050	38	33,200	16	
Nonradiological workers							20
On site	316,000	2013	2050	38	8,320	4	
Off site	N/A						
<b>Solid Waste Operations Complex Waste Receiving and Processing Facility (OPS_WRAPCH)</b>							
Radiological workers	21,700,000	2013	2050	38	571,000	275	
Nonradiological workers							301
On site	1,980,000	2013	2050	38	52,100	26	
Off site	N/A						
<b>Solid Waste Operations Complex Waste Receiving and Processing Facility (OPS_WRAPRH)</b>							
Radiological workers	7,300,000	2019	2050	32	228,000	110	
Nonradiological workers							120
On site	666,000	2019	2050	32	20,800	10	
Off site	N/A						
<b>Central Waste Complex (OPS_CWCE)</b>							
Radiological workers	623,000	2013	2050	38	16,400	8	
Nonradiological workers							9
On site	69,200	2013	2050	38	1,820	1	
Off site	N/A						
<b>Total</b>	<b>33,900,000</b>				<b>932,000</b>	<b>450</b>	<b>450</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.

**Table I-73. Waste Management Alternative 3 Deactivation Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>T Plant Solid Waste Activities (DEA_TPLANT)</b>							
Radiological workers	22,200	2051	2051	1	22,200	11	14
Nonradiological workers							
On site	5,550	2051	2051	1	5,550	3	
Off site	N/A						
<b>Solid Waste Operations Complex Waste Receiving and Processing Facility-Deactivation of the Contact-Handled Mixed Transuranic/Transuranic Waste Facility (DEA_WRAPCH)</b>							
Radiological workers	285,000	2051	2051	1	285,000	138	151
Nonradiological workers							
On site	26,000	2051	2051	1	26,000	13	
Off site	N/A						
<b>Solid Waste Operations Complex Waste Receiving and Processing Facility-Remote-Handled Mixed Transuranic/Transuranic Waste Facility (DEA_WRAPRH)</b>							
Radiological workers	114,000	2051	2051	1	114,000	55	60
Nonradiological workers							
On site	10,400	2051	2051	1	10,400	5	
Off site	N/A						
<b>Central Waste Complex (DEA_CWCE)</b>							
Radiological workers	8,190	2051	2051	1	8,190	4	5
Nonradiological workers							
On site	911	2051	2051	1	911	1	
Off site	N/A						
<b>Total</b>	<b>472,000</b>				<b>472,000</b>	<b>230</b>	<b>230</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010c.

**Table I-74. Waste Management Alternative 3, Disposal Group 1, Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Two Integrated Disposal Facilities (One in 200-West Area and One in 200-East Area) (CON_IDFE)</b>							
Radiological workers	N/A						241
Nonradiological workers							
On site	1,500,000	2006	2008	3	500,000	241	
Off site	N/A						
<b>Two Integrated Disposal Facilities (One in 200-West Area and One in 200-East Area) (CON_IDFW)</b>							
Radiological workers	N/A						180
Nonradiological workers							
On site	1,120,000	2006	2008	3	373,000	180	
Off site	N/A						

**Table I-74. Waste Management Alternative 3, Disposal Group 1, Construction Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>River Protection Project Disposal Facility (CON_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	1,060,000	2019	2021	3	353,000	170	170
Off site	N/A						
<b>Total</b>	<b>3,680,000</b>				<b>1,230,000</b>	<b>591</b>	<b>591</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**Table I-75. Waste Management Alternative 3, Disposal Group 1, Operations Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Low-Level Radioactive Waste Burial Grounds (OPS_LLBG)</b>							
Radiological workers	587,000	2007	2050	44	13,300	7	
Nonradiological workers							9
On site	173,000	2007	2050	44	3,930	2	
Off site	294,000	2007	2050	44	6,680	4	
<b>Integrated Disposal Facility-200-East Area (OPS_IDFE)</b>							
Radiological workers	1,390,000	2009	2050	42	33,100	16	
Nonradiological workers							38
On site	1,920,000	2009	2050	42	45,700	22	
Off site	2,560,000	2009	2050	42	61,000	30	
<b>Integrated Disposal Facility-200-West Area (OPS_IDFW)</b>							
Radiological workers	114,000	2009	2050	42	2,710	2	
Nonradiological workers							4
On site	157,000	2009	2050	42	3,740	2	
Off site	210,000	2009	2050	42	5,000	3	
<b>River Protection Project Disposal Facility (OPS_RPPDF)</b>							
Radiological workers	1,660,000	2022	2050	29	57,200	28	
Nonradiological workers							43
On site	898,000	2022	2050	29	31,000	15	
Off site	1,660,000	2022	2050	29	57,200	28	
<b>Total</b>	<b>11,600,000</b>				<b>321,000</b>	<b>159</b>	<b>94</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 65.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Source:** Compiled from SAIC 2010c.

**Table I-76. Waste Management Alternative 3, Disposal Group 1, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Integrated Disposal Facility-200-East Area (CLO_IDFE)</b>							
Radiological workers	N/A						
Nonradiological workers							568
On site	2,360,000	2051	2052	2	1,180,000	568	
Off site	236,000	2051	2052	2	118,000	57	
<b>Integrated Disposal Facility-200-West Area (CLO_IDFW)</b>							
Radiological workers	N/A						
Nonradiological workers							47
On site	193,000	2051	2052	2	96,500	47	
Off site	19,300	2051	2052	2	9,650	5	
<b>Postclosure Care-Integrated Disposal Facility 200-East Area (CLO_POSTIDFE)</b>							
Radiological workers	N/A						
Nonradiological workers							2
On site	366,000	2053	2152	100	3,660	2	
Off site	N/A						
<b>Postclosure Care-Integrated Disposal Facility 200-West Area (CLO_POSTIDFW)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	30,000	2053	2152	100	300	1	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							558
On site	2,320,000	2051	2052	2	1,160,000	558	
Off site	232,000	2051	2052	2	116,000	56	
<b>Postclosure Care-River Protection Project Disposal Facility (CLO_POSTRPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							2
On site	353,000	2053	2152	100	3,530	2	
Off site	N/A						
<b>Total</b>	<b>6,110,000</b>				<b>2,690,000</b>	<b>1,300</b>	<b>1,180</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 120.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.

**Source:** Compiled from SAIC 2010c.

**Table I-77. Waste Management Alternative 3, Disposal Group 2, Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Two Integrated Disposal Facilities (One in 200-West Area and One in 200-East Area) (CON_IDFE)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	1,210,000	2006	2008	3	403,000	194	194
Off site	N/A						
<b>Two Integrated Disposal Facilities (One in 200-West Area and One in 200-East Area) (CON_IDFW)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	1,120,000	2006	2008	3	373,000	180	180
Off site	N/A						
<b>River Protection Project Disposal Facility (CON_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	8,190,000	2019	2021	3	2,730,000	1,310	1,310
Off site	N/A						
<b>Total</b>	<b>10,500,000</b>				<b>3,510,000</b>	<b>1,680</b>	<b>1,680</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**Table I-78. Waste Management Alternative 3, Disposal Group 2, Operations Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Low-Level Radioactive Waste Burial Grounds (OPS_LLBG)</b>							
Radiological workers	587,000	2007	2050	44	13,300	7	
Nonradiological workers							9
On site	173,000	2007	2050	44	3,930	2	
Off site	294,000	2007	2050	44	6,680	4	
<b>Integrated Disposal Facility-200-East Area (OPS_IDFE)</b>							
Radiological workers	945,000	2009	2100	92	10,300	5	
Nonradiological workers							12
On site	1,310,000	2009	2100	92	14,200	7	
Off site	1,750,000	2009	2100	92	19,000	10	
<b>Integrated Disposal Facility-200-West Area (OPS_IDFW)</b>							
Radiological workers	114,000	2009	2050	42	2,710	2	
Nonradiological workers							4
On site	157,000	2009	2050	42	3,740	2	
Off site	210,000	2009	2050	42	5,000	3	

**Table I-78. Waste Management Alternative 3, Disposal Group 2, Operations Rollup  
Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>River Protection Project Disposal Facility (OPS_RPPDF)</b>							
Radiological workers	35,100,000	2022	2100	79	444,000	214	
Nonradiological workers							329
On site	18,900,000	2022	2100	79	239,000	115	
Off site	35,100,000	2022	2100	79	444,000	214	
<b>Total</b>	<b>94,600,000</b>				<b>1,210,000</b>	<b>585</b>	<b>354</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 231.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Source:** Compiled from SAIC 2010c.

**Table I-79. Waste Management Alternative 3, Disposal Group 2, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Integrated Disposal Facility-200-East Area (CLO_IDFE)</b>							
Radiological workers	N/A						
Nonradiological workers							177
On site	735,000	2101	2102	2	368,000	177	
Off site	73,500	2101	2102	2	36,800	18	
<b>Integrated Disposal Facility-200-West Area (CLO_IDFW)</b>							
Radiological workers	N/A						
Nonradiological workers							47
On site	193,000	2051	2052	2	96,500	47	
Off site	19,300	2051	2052	2	9,650	5	
<b>Postclosure Care-Integrated Disposal Facility 200-East Area (CLO_POSTIDFE)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	114,000	2103	2202	100	1,140	1	
Off site	N/A						
<b>Postclosure Care-Integrated Disposal Facility 200-West Area (CLO_POSTIDFW)</b>							
Radiological workers	N/A						
Nonradiological workers							1
On site	30,000	2053	2152	100	300	1	
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							4,330
On site	18,000,000	2101	2102	2	9,000,000	4,330	
Off site	1,800,000	2101	2102	2	900,000	433	

**Table I-79. Waste Management Alternative 3, Disposal Group 2, Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Postclosure Care–River Protection Project Disposal Facility (CLO_POSTRPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	2,730,000	2103	2202	100	27,300	14	14
Off site	N/A						
<b>Total</b>	<b>23,700,000</b>				<b>10,400,000</b>	<b>5,030</b>	<b>4,570</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 456.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**Table I-80. Waste Management Alternative 3, Disposal Group 3, Construction Rollup Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Two Integrated Disposal Facilities (One in 200-West Area and One in 200-East Area) (CON_IDFE)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	1,210,000	2006	2008	3	403,000	194	194
Off site	N/A						
<b>Two Integrated Disposal Facilities (One in 200-West Area and One in 200-East Area) (CON_IDFW)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	1,120,000	2006	2008	3	373,000	180	180
Off site	N/A						
<b>River Protection Project Disposal Facility (CON_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	8,190,000	2019	2021	3	2,730,000	1,310	1,310
Off site	N/A						
<b>Total</b>	<b>10,500,000</b>				<b>3,510,000</b>	<b>1,680</b>	<b>1,680</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 0.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.

**Table I-81. Waste Management Alternative 3, Disposal Group 3, Operations Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Low-Level Radioactive Waste Burial Grounds (OPS_LLBG)</b>							
Radiological workers	587,000	2007	2050	44	13,300	7	9
Nonradiological workers							
On site	173,000	2007	2050	44	3,930	2	
Off site	294,000	2007	2050	44	6,680	4	
<b>Integrated Disposal Facility-200-East Area (OPS_IDFE)</b>							
Radiological workers	1,610,000	2009	2165	157	10,300	5	12
Nonradiological workers							
On site	2,230,000	2009	2165	157	14,200	7	
Off site	2,980,000	2009	2165	157	19,000	10	
<b>Integrated Disposal Facility-200-West Area (OPS_IDFW)</b>							
Radiological workers	114,000	2009	2050	42	2,710	2	4
Nonradiological workers							
On site	157,000	2009	2050	42	3,740	2	
Off site	210,000	2009	2050	42	5,000	3	
<b>River Protection Project Disposal Facility (OPS_RPPDF)</b>							
Radiological workers	64,100,000	2022	2165	144	445,000	214	330
Nonradiological workers							
On site	34,500,000	2022	2165	144	240,000	116	
Off site	64,100,000	2022	2165	144	445,000	214	
<b>Total</b>	<b>171,000,000</b>				<b>1,210,000</b>	<b>586</b>	<b>355</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 231.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Source:** Compiled from SAIC 2010c.

**Table I-82. Waste Management Alternative 3, Disposal Group 3, Closure Rollup  
Workforce Estimate**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Integrated Disposal Facility-200-East Area (CLO_IDFE)</b>							
Radiological workers	N/A						177
Nonradiological workers							
On site	735,000	2166	2167	2	368,000	177	
Off site	73,500	2166	2167	2	36,800	18	
<b>Integrated Disposal Facility-200-West Area (CLO_IDFW)</b>							
Radiological workers	N/A						47
Nonradiological workers							
On site	193,000	2051	2052	2	96,500	47	
Off site	19,300	2051	2052	2	9,650	5	

**Table I-82. Waste Management Alternative 3, Disposal Group 3, Closure Rollup Workforce Estimate (continued)**

Activity	Total Hours	Duration			Hours per Year	Full-Time Equivalents per Year	Onsite Full-Time Equivalents
		Start	Finish	Years			
<b>Postclosure Care–Integrated Disposal Facility 200-East Area (CLO_POSTIDFE)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	114,000	2168	2267	100	1,140	1	1
Off site	N/A						
<b>Postclosure Care–Integrated Disposal Facility 200-West Area (CLO_POSTIDFW)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	30,000	2053	2152	100	300	1	1
Off site	N/A						
<b>Modified Resource Conservation and Recovery Act Subtitle C Barrier (CLO_RPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	18,000,000	2166	2167	2	9,000,000	4,330	4,330
Off site	1,800,000	2166	2167	2	900,000	433	
<b>Postclosure Care–River Protection Project Disposal Facility (CLO_POSTRPPDF)</b>							
Radiological workers	N/A						
Nonradiological workers							
On site	2,730,000	2168	2267	100	27,300	14	14
Off site	N/A						
<b>Total</b>	<b>23,700,000</b>				<b>10,400,000</b>	<b>5,030</b>	<b>4,570</b>

**Notes and Assumptions:**

Total number of offsite full-time equivalents = 460.

Hours worked per year = 2,080.

One full-time equivalent was assumed for activities estimated to require less than 2,080 hours per year.

**Key:** N/A=not applicable.**Source:** Compiled from SAIC 2010c.**I.3 REFERENCES**

SAIC (Science Applications International Corporation), 2010a, *Tank Closure Alternatives, Scaled Data Sets to Support the “Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington,”* Germantown, Maryland, June 3, August 26, and December 10.

SAIC (Science Applications International Corporation), 2010b, *Fast Flux Test Facility Alternatives, Scaled Data Sets to Support the “Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington,”* Germantown, Maryland, November 8.

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