Table 4-17. Radiological doses associated with the No-Action Alternative and resulting health effects to the public.[a]

Receptor(s)[b]	Individual				Population			
	Dose (millirem)			Probability of fatal cancer	Dose (person-rem)[c]			Number of fatal cancers
	Atmospheric releases	Aqueous releases	Total		Atmospheric releases	Aqueous releases	Total	
Offsite maximally exposed individual (current use)								
Annual	1.5×10^{-4}	NC[d]	1.5×10^{-4}	7.5×10^{-11}	NA[e]	NA	NA	NA
Lifetime[f]	2.6×10^{-3}	NC	2.6×10^{-3}	1.3×10^{-9}	NA	NA	NA	NA
Offsite maximally exposed individual (future use)								
Annual[g]	3.8×10^{-1}	NC	3.8×10^{-1}	1.9×10^{-7}	NA	NA	NA	NA
Lifetime[f]	1.3×10^{1}	NC	1.3×10^{1}	6.5×10^{-6}	NA	NA	NA	NA
Population								
Annual	NA	NA	NA	NA	1.4×10^{-3}	NC	1.4×10^{-3}	6.8×10^{-7}
Lifetime[f]	NA	NA	NA	NA	2.4×10^{-2}	NC	2.4×10^{-2}	1.2×10^{-5}

a. See Tables C-1 and C-2 in Appendix C.
b. The doses to the public from total SRS operations in 1995 were 0.20 millirem to the offsite maximally exposed individual (0.06 millirem from airborne releases and 0.14 millirem from aqueous releases) and 5.1 person-rem to the regional population (3.5 person-rem from airborne releases and 1.7 person-rem from aqueous releases). Source: Arnett, Mamatey, and Spitzer (1996).
c. For atmospheric releases, the dose is to the population within 50 miles (80 kilometers) of SRS. For aqueous releases, the dose is to the people using the Savannah River from the SRS to the Atlantic Ocean.
d. NC = not calculated; aqueous releases do not change with respect to baseline values.
e. NA = not applicable.
f. Based on 70 years of exposure; doses are corrected for radioactive decay.
g. Assumes future recreational use of L-Lake.

Table 4-21. Radiological doses associated with the Shut Down and Deactivate Alternative and resulting health effects to the public.[a]

	No-Action Alternative				Shut Down and Deactivate Alternative			
	Dose[c]				Dose[c]			
Receptor(s)[b]	Atmospheric releases	Aqueous releases	Total	Probability[d] or number of fatal cancers	Atmospheric releases	Aqueous releases	Total	Probability[d] or number of fatal cancers
Offsite maximally exposed individual								
Annual (millirem)	1.5×10^{-4}	NC[e]	1.5×10^{-4}	7.5×10^{-11}	4.0×10^{-4}	1.4×10^{-5}	4.2×10^{-4}	2.1×10^{-10}
Lifetime[f] (millirem)	2.6×10^{-3}	NC	2.6×10^{-3}	1.3×10^{-9}	1.9×10^{-2}	6.7×10^{-4}	1.9×10^{-2}	9.7×10^{-9}
Population								
Annual (person-rem)	1.4×10^{-3}	NC	1.4×10^{-3}	6.8×10^{-7}	4.2×10^{-4}	3.5×10^{-5}	4.6×10^{-4}	2.3×10^{-7}
Lifetime[f] (person-rem)	2.4×10^{-2}	NC	2.4×10^{-2}	1.2×10^{-5}	1.9×10^{-2}	2.3×10^{-3}	2.1×10^{-2}	1.0×10^{-5}

a. See Tables C-9, C-10, C-11, and C-12 in Appendix C.
b. The doses to the public from total SRS operations in 1995 were 0.20 millirem to the offsite maximally exposed individual (0.06 millirem from airborne releases and 0.14 millirem from aqueous releases) and 5.1 person-rem to the regional population (3.5 person-rem from airborne releases and 1.6 person-rem from aqueous releases). Source: Arnett, Mamatey, and Spitzer (1996).
c. For atmospheric releases, the dose is to the population within 50 miles (80 kilometers) of SRS. For aqueous releases, the dose is to the people using the Savannah River from SRS to the Atlantic Ocean.
d. For the offsite maximally exposed individual, probability of a latent fatal cancer; for the population, number of fatal cancers.
e. NC = not calculated for no action.
f. Based on 70 years of exposure. Doses are corrected for decay.

Table 4-23. Worker radiological doses associated with the Shut Down and Deactivate Alternative and resulting health effects.[a]

Receptor(s)	No-Action Alternative		Shutdown and Deactivate Alternative	
	Dose (rem)	Probability[b] or number of fatal cancers	Dose (rem)	Probability[b] or number of fatal cancers
Involved worker (current use)				
Annual[c]	5.0×10^{-8}	2.0×10^{-11}	2.4×10^{-4}	9.7×10^{-8}
Lifetime[d]	2.2×10^{-7}	8.7×10^{-11}	1.1×10^{-3}	4.5×10^{-7}
All involved workers[e] (current use)				
Annual[c] (person-rem)	3.5×10^{-6}	1.4×10^{-9}	1.7×10^{-2}	6.8×10^{-6}
Lifetime[d] (person-rem)	1.5×10^{-5}	6.1×10^{-9}	7.9×10^{-2}	3.2×10^{-5}
Involved worker (future use)				
Annual[c]	1.1×10^{-6}	4.4×10^{-10}	4.1×10^{-2}	1.6×10^{-5}
Lifetime[d]	1.5×10^{-5}	5.9×10^{-9}	7.5×10^{-1}	3.0×10^{-4}
All involved workers[e] (future use)				
Annual[c] (person-rem)	7.7×10^{-5}	3.1×10^{-8}	$2.9 \times 10^{+0}$	1.1×10^{-3}
Lifetime[d] (person-rem)	1.0×10^{-3}	4.1×10^{-7}	5.2×10^{1}	2.1×10^{-2}
Uninvolved worker[f]				
Annual[c]	2.0×10^{-8}	7.8×10^{-12}	1.5×10^{-6}	5.8×10^{-10}
Lifetime[d]	2.6×10^{-7}	1.1×10^{-10}	3.4×10^{-5}	1.4×10^{-8}
All uninvolved workers[g]				
Annual[c] (person-rem)	4.9×10^{-6}	2.0×10^{-9}	3.7×10^{-4}	1.5×10^{-7}
Lifetime[d] (person-rem)	6.6×10^{-5}	2.6×10^{-8}	8.6×10^{-3}	3.4×10^{-6}

a. Supplemental information provided in Tables C-15, C-16, and C-17 in Appendix C.
b. For the offsite maximally exposed individual, probability of a latent fatal cancer; for the population, number of fatal cancers.
c. Annual individual worker doses can be compared with the regulatory dose limit of 5 rem (10 CFR 835) and with the SRS administrative exposure guideline of 0.7 rem. Operational procedures ensure that the dose to the maximally exposed worker will remain as far below the regulatory dose limit as is reasonably achievable. The 1995 average dose for all Site workers who received a measurable dose was 256 rem (See Table 4-16).
d. Based on 5 years of exposure for current workers and 25 years of exposure for future and uninvolved workers. Doses are corrected for radioactive decay.
e. The estimated number of involved workers is 70.
f. L-Area.
g. L-Area the estimated number of all uninvolved workers is 251 (Source: Simpkins 1996c).

TE **Table 4-30.** Flow summary for Fourmile Branch (cubic feet per second).[a,b]

Station	Period of record	Range				
		Mean	Low	High	7Q10	7-day low flow
Road A-7	1972-1991	17.8	2.7	830	4.9	3.2
Road A-12.2	1976-1991	208	6.7	1200	11.1	7.6

a. Source: Wike et al. (1994).
b. To convert cubic feet to cubic meters, multiply by 0.028317.

TE **Table 4-31.** Fourmile Branch field data.[a]

Sampling location	Water temperature (°C)	pH	Stream maximum depth (cm)[b]	Stream velocity (cm/sec)
01 Fourmile Branch at Road E-1	(CCWS)[c]			
Mean	16.8		48	73
Range	1.3-28.5	5.10-8.10	19-199	7-250
Samples	46		33	41
02 Fourmile Branch at Road A-7	(1987-1991)			
Mean	17	(d)		
Range	6.4-26	5.4-8.1	NA[e]	NA
Samples	60			
03 Fourmile Branch at Road 3	(CCWS)			
Mean	16.9		147	9
Range	0.1-27.0	5.30-8.30	121-193	1-45
Samples	46		36	37
04 Fourmile Branch at Road A	(1987-1991)			
Mean	18.5			
Range	6.2-31	3.1-8.5		
Samples	60		NA	NA
05 Fourmile Branch at Road A-12.2	(CCWS)			
Mean	39.4			73
Range	9.6-52.0	5.90-9.05	NA	14-100
Samples	46			41

a. Source: Wike et al. (1994).
b. To convert centimeters to inches, multiply by 0.3937.
c. CCWS = Comprehensive Cooling Water Study.
d. Blank spaces = Mean not calculated due to insufficient data in report.
e. NA = Not analyzed.

TE **Table 4-30.** Flow summary for Fourmile Branch (cubic feet per second).[a,b]

Station	Period of record	Range				
		Mean	Low	High	7Q10	7-day low flow
Road A-7	1972-1991	17.8	2.7	830	4.9	3.2
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a. Source: Wike et al. (1994).
b. To convert cubic feet to cubic meters, multiply by 0.028317.

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Sampling location	Water temperature (°C)	pH	Stream maximum depth (cm)[b]	Stream velocity (cm/sec)
01 Fourmile Branch at Road E-1	(CCWS)[c]			
Mean	16.8		48	73
Range	1.3-28.5	5.10-8.10	19-199	7-250
Samples	46		33	41
02 Fourmile Branch at Road A-7	(1987-1991)			
Mean	17	(d)		
Range	6.4-26	5.4-8.1	NA[e]	NA
Samples	60			
03 Fourmile Branch at Road 3	(CCWS)			
Mean	16.9		147	9
Range	0.1-27.0	5.30-8.30	121-193	1-45
Samples	46		36	37
04 Fourmile Branch at Road A	(1987-1991)			
Mean	18.5			
Range	6.2-31	3.1-8.5		
Samples	60		NA	NA
05 Fourmile Branch at Road A-12.2	(CCWS)			
Mean	39.4			73
Range	9.6-52.0	5.90-9.05	NA	14-100
Samples	46			41

a. Source: Wike et al. (1994).
b. To convert centimeters to inches, multiply by 0.3937.
c. CCWS = Comprehensive Cooling Water Study.
d. Blank spaces = Mean not calculated due to insufficient data in report.
e. NA = Not analyzed.

Table 4-33. Water quality data (range of values) for Steel Creek (November 1985-December 1991).[a] TE

Parameter	Steel Creek (1985-1986)		Steel Creek (1987-1991)	
	Corridor	Swamp/Delta	Corridor	Swamp/Delta
Temperature (°C)	10.9-29.9	7.6-27.7	6.6-29.3	1.3-28.9
Dissolved oxygen (mg/l)	4.9-11.1	0.6-11.4	4.7-13.0	1.9-12.5
pH	5.4-6.2	4.8-7.3	5.3-8.5	5.0-7.7
Conductance (µS/cm)	41-97	22-135	18-126	23-114
Total dissolved solids (mg/l)	29-74	7-84	27-83	23-91
Total suspended solids (mg/l)	<1-204	4-40	1-59	<1-148
Total organic carbon (mg/l)	4-12	3-13	1-8	1-19
Dissolved organic carbon (mg/l)	4-9	3-12	2-10	1-17
Total inorganic carbon (mg/l)	2-8	1-13	2-6	2-10
Alkalinity (mg/l)	6.4-23.7	1.8-50.0	9-23	7-37
Ortho-phosphate (mg/l)	<5-87	<5-51	<5-136	5-67
Total phosphate (mg/l)	18-343	8-154	19-180	19-494
Nitrite (mg/l)	1-20	<1-5	<1-82	1-13
Nitrate (mg/l)	<10-402	<10-582	<10-611	<10-366
Ammonia (mg/l)	11-764	<10-190	<10-1,080	<10-157
Total inorganic nitrogen (mg/l)	27-808	21-664	17-1,119	<10-407
Silica (mg/l)	3.2-10.7	1.2-13.3	0.8-9.7	0.6-19.1
Total aluminum (mg/l)	<100-991	<100-1,210	<100-1,216	<100-449
Dissolved aluminum (mg/l)	<100-905	<100-1,270	<100-202	<100-240
Total calcium (mg/l)	2.6-4.4	2.7-11.5	311-4.8	2.6-7.8
Dissolved calcium (mg/l)	2.8-5.8	2.4-11.1	1.1-4.8	1.9-7.8
Total iron (mg/l)	0.1-3.8	0.3-7.4	0.1-1.2	0.2-4.3
Dissolved iron (mg/l)	<0.1-3.2	0.1-0.7	<0.1-1.1	<0.1-2.7
Total magnesium (mg/l)	0.74-1.94	0.64-2.66	0.77-1.40	0.78-1.87
Dissolved magnesium (mg/l)	0.70-2.01	0.62-2.59	0.87-1.46	0.84-1.83
Total manganese (mg/l)	<20-563	<20-3,590	<20-310	<20-4,173
Dissolved manganese (mg/l)	<20-466	<20-3,590	<20-311	<20-4,067
Total potassium (mg/l)	1.06-1.98	0.45-4.12	0.87-1.92	0.79-4.28
Dissolved potassium (mg/l)	1.00-1.94	0.38-3.35	0.24-1.96	0.54-4.45
Total sodium (mg/l)	4.0-13.1	6.0-14.6	4.1-13.5	5.1-13.1
Dissolved sodium (mg/l)	3.7-12.1	6.0-14.8	6.9-13.6	5.4-13.3
Chloride (mg/l)	7-8	6-10	4.0-11	3-12
Hydrogen sulfide (mg/l)	<0.1	<0.1	<0.1	<0.1
Sulfate (mg/l)	3-11	1-12	1-9	1-12

a. Source: Wike et al. (1994).

TE **Table 4-35.** Lower Three Runs field data.[a]

Sampling location	Water temperature (°C)	pH	Stream maximum depth (cm)[b]	Stream velocity (cm/sec)
01 Fourmile Branch at Road B	(CCWS)[c]			
Mean	19.3	6.94	41	34
Range	7.0-31.0	5.50-8.80	21-89	4-120
Samples	46	46	28	38
02 Lower Three Runs at Patterson Mill	(CCWS)			
Mean	16.2	7.17	69	19
Range	1.5-25.0	5.90-8.50	48-117	4-60
Samples	46	46	30	39
02 Lower Three Runs at Patterson Mill	(1987-1991)			
Mean	18	(d)		
Range	7.7-29.0	5.9-7.4	NA[e]	NA
Samples	60	60		
03 Lower Three Runs at US Highway 125	(CCWS)			
Mean	16.0	7.17	222	11
Range	1.5-24.7	6.10-8.40	195-283	2-50
Samples	60	46	19	39

a. Source: Wike et al. (1994).
b. To convert centimeters to inches, multiply by 0.3937.
c. CCWS = Comprehensive Cooling Water Study.
d. Blank spaces - Mean not calculated due to insufficient data in report.
e. NA = Not analyzed.

TE **Table 4-36.** Lower Three Runs physical characteristics and general chemistry.[a]

Sampling location	Dissolved oxygen (mg/l)	Specific conductance (µmhos/cm)	Turbidity (NTU)	Total suspended solids (mg/l)
01 Lower Three Runs at Road B	(CCWS)[b]			
Mean	7.06	74.1	6.1	4.11
Range	2.40-10.2	56.9-134.8	1.2-37.0	0.25-28.4
Samples	46	38	43	44
02 Lower Three Runs at Patterson Mill	(CCWS)			
Mean	7.51	86.3	3.5	5.40
Range	5.20-11.9	46.6-125.4	1.1-13.5	0.25-69.2
Samples	46	38	43	44
02 Lower Three Runs at Patterson Mill	(1987-1991)			
Mean	8.0	75	2.8	4.9
Range	5.8-11	13-140	0.94-38	1-34
Samples	60	60	60	60
03 Lower Three Runs at US Highway 125	(CCWS)			
Mean	7.30	82.5	6.3	4.43
Range	4.60-13.0	38.9-119.2	1.4-50.0	0.25-27.2
Samples	46	38	43	45

a. Source: Wike et al. (1994).
b. CCWS = Comprehensive Cooling Water Study.

TE **Table 4-35.** Lower Three Runs field data.[a]

Sampling location	Water temperature (°C)	pH	Stream maximum depth (cm)[b]	Stream velocity (cm/sec)
01 Fourmile Branch at Road B	(CCWS)[c]			
Mean	19.3	6.94	41	34
Range	7.0-31.0	5.50-8.80	21-89	4-120
Samples	46	46	28	38
02 Lower Three Runs at Patterson Mill	(CCWS)			
Mean	16.2	7.17	69	19
Range	1.5-25.0	5.90-8.50	48-117	4-60
Samples	46	46	30	39
02 Lower Three Runs at Patterson Mill	(1987-1991)			
Mean	18	(d)		
Range	7.7-29.0	5.9-7.4	NA[e]	NA
Samples	60	60		
03 Lower Three Runs at US Highway 125	(CCWS)			
Mean	16.0	7.17	222	11
Range	1.5-24.7	6.10-8.40	195-283	2-50
Samples	60	46	19	39

a. Source: Wike et al. (1994).
b. To convert centimeters to inches, multiply by 0.3937.
c. CCWS = Comprehensive Cooling Water Study.
d. Blank spaces - Mean not calculated due to insufficient data in report.
e. NA = Not analyzed.

TE **Table 4-36.** Lower Three Runs physical characteristics and general chemistry.[a]

Sampling location	Dissolved oxygen (mg/l)	Specific conductance (µmhos/cm)	Turbidity (NTU)	Total suspended solids (mg/l)
01 Lower Three Runs at Road B	(CCWS)[b]			
Mean	7.06	74.1	6.1	4.11
Range	2.40-10.2	56.9-134.8	1.2-37.0	0.25-28.4
Samples	46	38	43	44
02 Lower Three Runs at Patterson Mill	(CCWS)			
Mean	7.51	86.3	3.5	5.40
Range	5.20-11.9	46.6-125.4	1.1-13.5	0.25-69.2
Samples	46	38	43	44
02 Lower Three Runs at Patterson Mill	(1987-1991)			
Mean	8.0	75	2.8	4.9
Range	5.8-11	13-140	0.94-38	1-34
Samples	60	60	60	60
03 Lower Three Runs at US Highway 125	(CCWS)			
Mean	7.30	82.5	6.3	4.43
Range	4.60-13.0	38.9-119.2	1.4-50.0	0.25-27.2
Samples	46	38	43	45

a. Source: Wike et al. (1994).
b. CCWS = Comprehensive Cooling Water Study.

TE **Table 4-70.** Annular sector factors for local dose evaluations.

Sector[a]	Fraction of total population dose in sector[b]					Fraction of total population dose received by average person in sector[b]				
	1 (5-10 miles)	2 (10-20 miles)	3 (20-30 miles)	4 (30-40 miles)	5 (40-50 miles)	1 (5-10 miles)	2 (10-20 miles)	3 (20-30 miles)	4 (30-40 miles)	5 (40-50 miles)
A (N)	1.44×10^{-4}	4.18×10^{-3}	8.96×10^{-4}	9.96×10^{-5}	6.90×10^{-5}	5.13×10^{-6}	7.26×10^{-7}	8.26×10^{-8}	1.81×10^{-8}	5.22×10^{-9}
B (NNE)	5.76×10^{-5}	1.86×10^{-3}	2.98×10^{-4}	1.23×10^{-4}	1.03×10^{-4}	9.59×10^{-6}	1.30×10^{-6}	1.33×10^{-7}	2.54×10^{-8}	6.64×10^{-9}
C (NE)	2.14×10^{-5}	1.02×10^{-2}	7.60×10^{-4}	1.94×10^{-4}	7.50×10^{-5}	2.14×10^{-5}	3.18×10^{-6}	2.40×10^{-7}	3.39×10^{-8}	6.78×10^{-9}
D (ENE)	2.65×10^{-3}	2.86×10^{-2}	2.22×10^{-3}	3.23×10^{-4}	5.27×10^{-4}	9.14×10^{-5}	8.46×10^{-6}	4.57×10^{-7}	5.58×10^{-8}	1.19×10^{-8}
E (E)	7.31×10^{-1}	6.59×10^{-2}	2.16×10^{-3}	4.16×10^{-4}	4.50×10^{-5}	4.35×10^{-3}	9.01×10^{-6}	3.76×10^{-7}	4.35×10^{-8}	9.59×10^{-9}
F (ESE)	7.71×10^{-3}	9.47×10^{-3}	5.91×10^{-4}	1.06×10^{-4}	2.83×10^{-5}	1.98×10^{-4}	5.61×10^{-6}	2.82×10^{-7}	3.62×10^{-8}	8.03×10^{-9}
G (SE)	3.86×10^{-3}	2.83×10^{-3}	2.09×10^{-3}	2.54×10^{-4}	7.08×10^{-5}	1.38×10^{-4}	4.78×10^{-6}	2.96×10^{-7}	3.51×10^{-8}	7.62×10^{-9}
H (SSE)	8.94×10^{-3}	2.87×10^{-3}	3.03×10^{-4}	3.71×10^{-4}	2.15×10^{-5}	2.08×10^{-4}	6.78×10^{-6}	3.64×10^{-7}	2.53×10^{-7}	7.81×10^{-9}
TC I (S)	6.58×10^{-4}	5.73×10^{-3}	6.84×10^{-4}	3.92×10^{-4}	3.48×10^{-5}	6.58×10^{-4}	9.51×10^{-6}	4.74×10^{-7}	4.98×10^{-8}	9.62×10^{-9}
J (SSW)	7.75×10^{-4}	1.17×10^{-2}	1.43×10^{-3}	3.35×10^{-4}	4.68×10^{-5}	3.88×10^{-4}	1.21×10^{-5}	6.56×10^{-7}	7.39×10^{-8}	1.47×10^{-8}
K (SW)	3.10×10^{-3}	8.08×10^{-3}	1.05×10^{-3}	1.51×10^{-4}	3.22×10^{-5}	1.72×10^{-4}	7.90×10^{-6}	4.31×10^{-7}	5.34×10^{-8}	1.12×10^{-8}
L (WSW)	3.31×10^{-3}	5.80×10^{-3}	2.56×10^{-3}	1.18×10^{-4}	6.93×10^{-5}	5.09×10^{-5}	4.86×10^{-6}	3.32×10^{-7}	4.77×10^{-8}	1.10×10^{-8}
M (W)	1.32×10^{-3}	8.18×10^{-3}	1.98×10^{-3}	3.15×10^{-4}	6.54×10^{-5}	2.25×10^{-5}	2.28×10^{-6}	2.30×10^{-7}	3.64×10^{-8}	8.89×10^{-9}
N (WNW)	3.42×10^{-3}	3.05×10^{-3}	1.55×10^{-2}	1.26×10^{-3}	7.41×10^{-5}	7.04×10^{-6}	8.41×10^{-7}	1.34×10^{-7}	2.31×10^{-8}	5.92×10^{-9}
O (NW)	1.44×10^{-3}	4.25×10^{-3}	6.07×10^{-3}	3.54×10^{-4}	1.10×10^{-5}	4.92×10^{-6}	6.65×10^{-7}	6.37×10^{-8}	1.23×10^{-8}	3.34×10^{-9}
P (NNW)	1.58×10^{-3}	1.06×10^{-2}	1.84×10^{-3}	9.28×10^{-5}	2.39×10^{-5}	4.01×10^{-6}	5.45×10^{-7}	6.25×10^{-8}	1.28×10^{-8}	3.62×10^{-9}

a. Sector letter is letter shown in Figure 4-40. Letter in parentheses after the sector letter indicates the compass direction of the sector (from SRS center).
b. To convert miles to kilometers, multiply by 1.6093.

Table 4-72. Cumulative maximum Savannah River Site boundary line ground-level concentrations for PM_{10} and air toxics (in micrograms per cubic meter of air).

Pollutant	Averaging time	Concentrations of existing sources[a]	Background concentrations[b]	Increase concentration: Shut Down and Deactivate[c]	Increase concentration: Waste Management[d]	Increase concentration: Plutonium Solutions[d]	Increase concentration: Spent Nuclear Fuel[d]	Increase concentration: Interim Management Nuclear Material[d]	Regulatory standards[e]	Percent of standard (%)
Particulate matter less than 10 microns in diameter	24 hours	51	62	16	5	0.2	0.4	(f)	150	90
	Annual	3	19	16	0.1	0.005	0.01	(f)	50	76
Antimony	24 hours	NA[c]	NA	8.6×10^{-6}	NA	NA	NA	NA	2.5	<0.01
Arsenic	24 hours	NA[f]	NA	2.2×10^{-5}	NA	NA	NA	NA	1.0	<0.01
Beryllium	24 hours	NA[f]	NA	2.9×10^{-6}	NA	NA	NA	NA	0.01	0.03
Cadmium	24 hours	NA[f]	NA	1.3×10^{-6}	NA	NA	NA	NA	0.25	<0.01
Lead	Quarterly	4.0×10^{-4}	0.03	1.8×10^{-5}	NA	NA	NA	NA	1.5	0.02
Mercury	24 hours	0.014	NA	1.2×10^{-6}	NA	NA	NA	NA	0.25	5.6
Manganese	24 hours	0.821	NA	2.6×10^{-6}	NA	NA	NA	NA	25	3.3

a. Modeled concentrations based on maximum potential emissions from metals and actual emissions for PM_{10} from existing SRS sources (DOE 1995a).
b. Source: SCDHEC (1996b).
c. Calculated annual and 24-hour concentration from MEPAS modeling.
d. Source: DOE (1995c); DWPF emissions are included in waste management.
e. Source: SCDHEC (1976).
f. NA = Not available. No ambient air monitoring is performed for toxics. Concentrations assumed to be zero.
g. Source: Stewart (1996).

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Table 4-73. Estimated maximum annual cumulative radiological doses and resulting health effects to offsite population and facility workers.

Activity	Offsite maximally exposed individual (rem)			Annual Fatal cancer risk[b]	Total collective[a] (to 80-kilometer population)			Annual Latent cancers fatalities[c]	All workers	
	Dose from airborne releases	Dose from aqueous releases	Total dose		Dose from airborne releases	Dose from aqueous releases	Total dose		Dose (person-rem)	Latent cancer fatalities[c]
Shut Down and Deactivate	6.9×10^{-6}	1.4×10^{-8}	6.9×10^{-6}	3.5×10^{-9}	2.7×10^{-3}	3.5×10^{-5}	2.7×10^{-3}	1.4×10^{-6}	2.9×10^{-2}	1.2×10^{-5}
Waste Management	3.2×10^{-5}	6.9×10^{-7}	3.3×10^{-5}	1.7×10^{-8}	1.5	6.8×10^{-3}	1.5	7.5×10^{-4}	81	0.032
Current SRS practices	6.0×10^{-5}	1.4×10^{-4}	2.0×10^{-4}	1.0×10^{-7}	3.5	1.6	5.1	2.6×10^{-3}	251	0.10
Interim management of nuclear materials[d]	9.7×10^{-4}	2.4×10^{-5}	9.9×10^{-4}	5.0×10^{-7}	40	0.09	40	0.02	127	0.051
Stabilization of plutonium solutions[e]	8.61×10^{-6}	2.9×10^{-7}	8.9×10^{-6}	4.5×10^{-9}	0.38	3.7×10^{-4}	0.38	1.9×10^{-4}	131	0.052
Defense Waste Processing Facility[f]	1.0×10^{-6}	NA[g]	1.0×10^{-6}	5.0×10^{-10}	0.07	NA	0.07	3.5×10^{-5}	118	0.047
Plant Vogtle[h]	3.7×10^{-7}	1.7×10^{-4}	1.7×10^{-4}	8.5×10^{-8}	0.047	9.7×10^{-3}	0.057	2.9×10^{-5}	NA	NA
SRS spent nuclear fuel[i]	4.0×10^{-4}	1.0×10^{-4}	5.0×10^{-4}	2.5×10^{-7}	16.0	2.4	18.4	9.2×10^{-3}	79	0.032
Total	1.5×10^{-3}	4.3×10^{-4}	1.9×10^{-3}	9.6×10^{-7}	61	4.1	66	0.033	787	0.31

a. Collective dose (person-rem): for the 80-kilometer (50-mile) population from atmospheric releases; for downstream users of Savannah River water from liquid releases.
b. Probability of an excess fatal cancer.
c. Incidence of excess latent fatal cancers.
d. Source: DOE (1995d).
e. Source: DOE (1995e).
f. Source: DOE (1995f).
g. NA = not applicable. There are no direct radioactive releases to surface water from the Defense Waste Processing Facility operations.
h. NRC (1994).
i. Highest values from Appendix C of DOE (1995g).

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Table 4-74. Irreversibly or irretrievably committed resources.

Resource	Alternatives	
	No Action	Shutdown/Maintain[a]
Groundwater	Increased groundwater demand of approximately 190 and 210 gallons per minute (0.012 and 0.014 cubic meter per second) from Crouch Branch and McQueen Branch aquifers to provide auxiliary equipment cooling water in L- and K-Area respectively.	Additional demand at K- and L-Areas of up to 200 gallons per minute (0.013 cubic meter per second) to support fire protection at each reactor.
Terrestrial Ecology		As L-Lake recedes there will be a loss of shoreline habitat for semiaquatic and terrestrial animals using the reservoir for drinking water and food, a loss of eagle foraging habitat and a loss of alligator habitat.
	Loss of waterfowl habitat in Par Pond as the water level is allowed to fluctuate.	The same resources committed in the No Action Alternative for Par Pond would apply.
Aquatic Ecology	Continued loss of primary and secondary productivity in L-Lake due to the elimination of Savannah River water inputs.	As L-Lake recedes, there will be a loss of up to a 1000 acres of laucustrine habitat. L10-15 L12-03 L15-06
	Aquatic communities in Par Pond and Lower Three Runs will be reduced in number, diversity, and productivity.	Aquatic communities in L-Lake, Steel Creek, Lower Three Runs, and Par Pond will be reduced in number, diversity, and productivity.
	Entrainment losses of an estimated 234,000 larval fish and 117,000 fish eggs each spawning season with the continued Savannah River water withdrawals for L-Lake.	
Wetlands Ecology	Loss of open water and marsh habitat in the Steel Creek corridor and delta, and continued loss of riparian habitat in Lower Three Runs due to the prior reduction of flows to 10 cubic feet (0.28 meter) per second.	The same resources committed in the No Action Alternative would apply.
	Reduction of littoral zone wetlands around Par Pond of up to 200 acres.	The same resources committed in the No Action Alternative would apply.

a. *The same resources committed in the Shutdown and Maintain Alternative would apply to the Shutdown and Deactivate Alternative.*