

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