

TABLE M.5.2.13.1–1.—Bounding Annual Radionuclide Particulate Inventories in the Target Chamber (No Action Alternative)

Isotope	Quantity (curies)
Activated particulates^a	
Sodium-24	4.0×10^{-1}
Manganese-56	1.3
Cobalt-60	7.4×10^{-2}
Manganese-54	1.4×10^{-1}
Scandium-48	3.6×10^{-2}
Iron-55	7.1×10^{-1}
Scandium-46	4.6×10^{-2}
Calcium-45	1.0×10^{-1}
Scandium-44	2.0×10^{-1}
Tantalum-182	2.5×10^{-2}
Scandium-44m	6.4×10^{-2}
Gadolinium-153	2.5×10^{-2}
Nickel-65	2.0×10^{-1}
Copper-64	1.5
Cobalt-62m	1.6×10^{-1}
Lead-203	1.6×10^{-2}
Scandium-47	2.4×10^{-2}
Potassium-42	1.8×10^{-2}
Gallium-72	2.8×10^{-3}
Hafnium-181	2.8×10^{-3}
Gadolinium-159	8.6×10^{-2}
Chromium-51	4.7×10^{-2}
Dysprosium-159	4.2×10^{-3}
Europium-156	7.9×10^{-4}
Nickel-63	8.8×10^{-3}
Depleted uranium^b	
Uranium-234	8.6×10^{-7}
Uranium-235	4.0×10^{-8}
Uranium-238	1.6×10^{-6}

Source: LLNL 2003d.

^a After one year of operation without cleanup; corresponds to a final 45-MJ experiment, ending a year with 1,200-MJ total yield.

^b The assumed composition is: 99.64% uranium-238, 0.36% uranium-235, and 0.0028% uranium-234. The quantities listed correspond to the maximum use over a year of 5 g.

Ci = curies; g = grams; MJ = megajoules.

Tritium

Tritium would arrive at the facility in individual targets, containing up to 5 curies each: 2 curies in the capsule and up to 3 curies in the associated hardware. If direct drive were implemented, each target would contain up to 70 curies. The maximum annual tritium throughput at the NIF would be limited to 1,750 curies per year. The in-process inventory limit for tritium for the NIF would total no more than 500 curies at any time.

Items exposed to tritium are subject to tritium contamination. After an experiment, unburned tritium would be exhausted from the target chamber to the vacuum system and then processed and retained in the tritium collection system. Residual tritium on the first wall surface and on