

Vault door

101 3/4"

246 1/8"

Figure 10. Schematic top-down (a) and 3D (b) views of the HFNG vault, with thicknesses of wall and roof shielding. The east side of the vault is the 53 1/4"-thick east wall of Room 1140 (which is underground).

HFNG photons (high-energy x-rays and gamma rays) are shielded by the thick concrete walls of the vault. The expected total radiation dose rate, including neutrons and gamma-rays, for an average adult standing 20 cm away from the outside wall of the vault is < 0.2 mrem/hour. The calculated neutron and gamma-dose rates in the plane of the HFNG target are shown in Figures 11a and 11b, respectively.

Neutron Dose

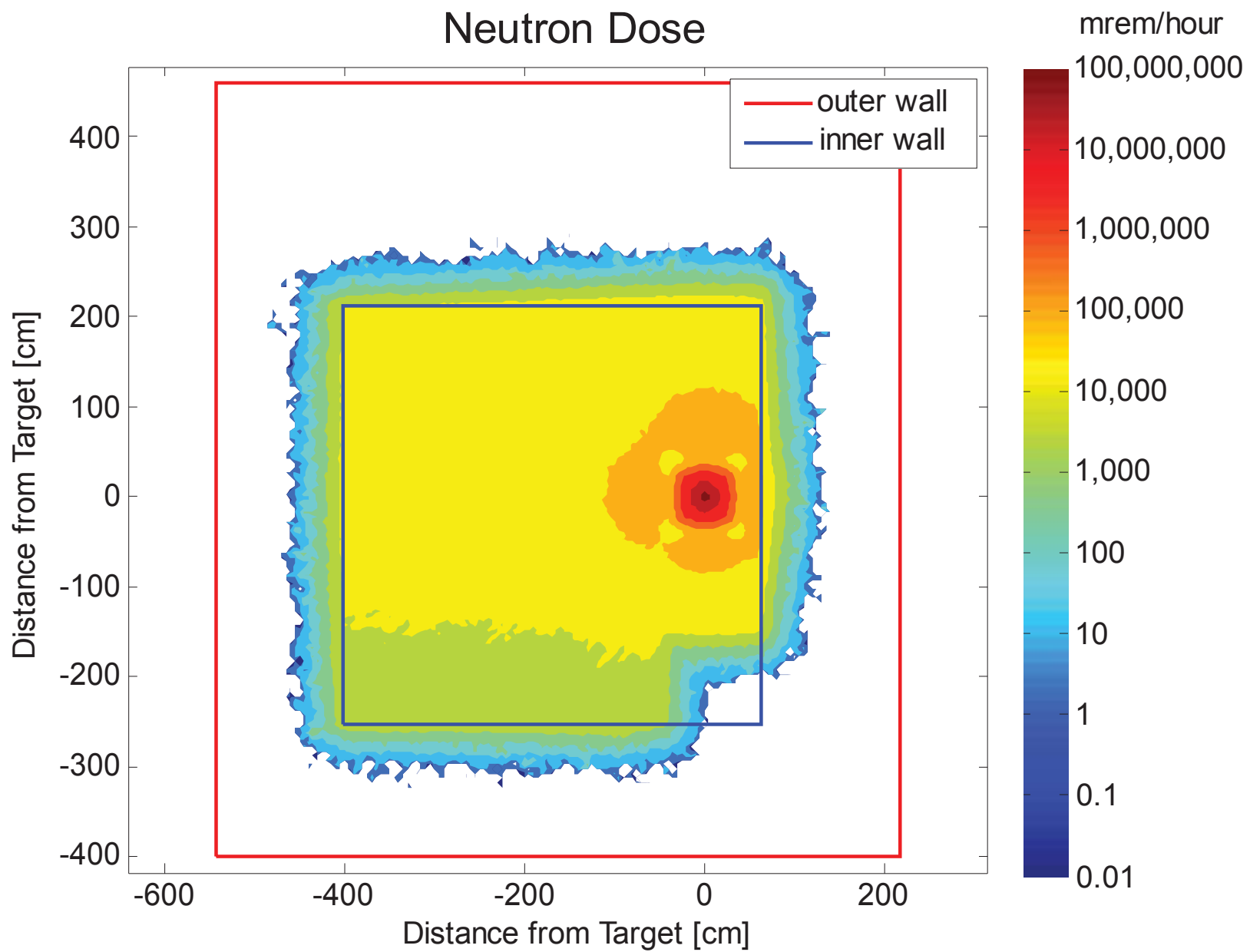


Figure 11a. Top-down view of the neutron dose rate in the target plane of the HFNG under full output. The inner and outer walls of the HFNG vault are shown by blue and red dashed lines, respectively.