I've spent some time modeling the beam dump and some parts of the ERL room. The beam dump is the most time-consuming part as the shape is tricky/complicated. There is a lot of water around the beam dump and esp. in the front portion—water pipes leaving the dump. [I "stop" (don't include) when the water pipe can be (should be) dropped to the floor ... otherwise the water pipe can be extended outside the room.] In total, I've got almost 58 liters (L) of water (in my simulation).

{I attach one view of the beam dump (in YZ, Y --- vertical pointing to the sky and Z = beam direction), though some intricate details can't be shown/seen in this scale. The “red” portion is the water. }

While I'm still running to get more stable values of doses behind all the concrete/steel, the simulation for the energy deposit in the beam dump has quickly converged with small statistical errors. I've used the sigma's on positions (1 cm) and angles (35 mrad) given by Dmitry for the incoming beam spectrum.

So from the MCNPX simulation, out of 3 MeV electrons, apparently, there is on average 0.01337 MeV deposited in the water volume per electron. For 1 MW (ie. 1/3 amperes), one would have energy deposited at the rate of \(4.456 \times 10^{-3}\) MW.

The SLAC-TN-67-29 document of Oct. 1967 said on average there would be a release of 0.3 L per MW-second. So,

\[
=> \text{it's } 0.3 \times 4.447 \times 10^{-3} \quad \text{or} \quad 1.337 \times 10^{-3} \quad \text{L per second (at 1 MW running)}
\]

or \(~4.812\) L per hour (at 1 MW running).