**Requirements for Gallium target system for Cu-67 production at LERF**

At present, the plan is to use tungsten container to hold liquid Gallium.

***Target – Material***

Gallium (99.9999% chemically pure)

Amount – 0.21 kg

***Target – Thermal***

Allowed Temperature rise: 20000 C, max.

***Target Holder- Mechanical***

Capacity: 0.45 L – allowing for volume expansion at 20000C

Material – Tungsten

Cooling – Water

Cooling water temperature – 350 C (to ensure Ga stays as liquid)

***Remote Control***

Remote refilling of the target holder with Gallium

* Requires the container holding Gallium to be transferred to be > 300C

Remote extraction of Gallium from the target holder after irradiation into DOT Type B container

* Over time, Tungsten target holder can become increasingly radioactive requiring remote extraction of Gallium
* For simplicity, this would require that the cooling water channels be not disconnected from the target.

Both filling and extraction would require remote control of filling and drainage ‘plugs’ of the target holder