

LIQUID METAL TARGET FOR A 5 MW SPALLATION NEUTRON SOURCE (ESS)

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Abstract

The ESS project was first to propose using mercury as a liquid target material for neutron sources which are not designed for high time average thermal neutron flux. This is generally the case for pulsed research sources but might also be true for other concepts. The development work going on for ESS and other pulsed research neutron sources is, therefore, of general interest also to the wider spallation source community. Detailed studies on window design, flow configurations radiation effects, metal technology and general loop design are well advanced and their status will be reported. The problem of cavitation erosion, which is receiving substantial attention in the current R&D work will be discussed as an example of where we stand with our understanding of the phenomena in liquid metal targets.

