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The common shielding project at ESS

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Radiation shielding on the ESS instruments has typically been budgeted at around 20% of the total instrument cost. Given the length of many instruments at ESS, that cost is dominated by the guide shielding. The ESS common shielding project aims to deliver cost-effective and standardized solutions for the guide shielding of all the long instruments at ESS. The design will satisfy the radiation dose requirements for the facility, while allowing for quick and convenient access to critical components, such as alignment features, minimizing activation and creation of nuclear waste, and reducing the background on the instruments. The design choices and economies of scale result in a typical cost saving of about 30%, compared to the estimates made at the time when the instrument budget was established. When summed over the 11 long instruments at ESS, that represents a cost saving of about 5 M€, as well as significant operational advantages resulting from the standardization.

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