

## **Towards a modified n\_TOF facility and increased radiation safety**

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Aiming for beam request latest by October 1<sup>st</sup> 2008 the design, construction and installation of the new n\_TOF target requires an important joint effort between CERN departments (AB/ATB, TS/CV, TS/MME, SC/RP,...) and the n\_TOF collaboration. Based on the results of the successful target inspection in 2007, the corresponding measurements and performed studies, we present a proposal for the new n\_TOF target layout. The design follows a similar principle as used to build the previous target, *i.e.*, using pure lead as target body and water cooling around. Studying alternative solutions and after a detailed study made in 2007, due to aspects of increased surface activation, a reduction in neutron flux and lack of acquired experience for the substitute approaches, the use of lead was confirmed to be the best compromise. The new target assembly will be installed through the experimental pit without needing to dismantle the existing infrastructure in the TT2A tunnel. The existing water cooling system is not to be reused due to the numerous required modifications which would lead to important individual and collective intervention doses. The presentation includes a detailed description of the envisaged new target design and addresses all requirements in terms of cooling, contamination and activation.