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## **Performance based safety design and results on cryogenics hazards**

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In the process of defining project alternatives for the cross section of the tunnel, safety aspects are an important factor. However, because of the unique nature of this infrastructure, the prescriptive requirements specified in the applicable legislative references often appear inappropriate. For some specific risks, identified in a hazard register, a set of standard best practices are not available. Therefore, in order to mitigate these risks, CERN's HSE Unit has proposed the application of a performance-based design approach.

This presentation will introduce the performance-based design method and summarise the different safety studies and risk assessments performed, revealing which safety features and dimensions the tunnel cross-section shall have in order to fulfil the integrity of the Safety Objectives. The contribution includes results from the studies related to the cryogenic hazards.

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