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AWAKE: operational safety in a proton driven plasma wakefield facility

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AWAKE is installed in the underground former CERN neutrino to Gran Sasso facility. Transforming the area to be compatible with the operation of a proton driven plasma wakefield experiment is challenging. The high energy of the drive beam (400GeV/c) causes radiation safety issues, but also fire safety, evacuation routes and integration of emergency equipment needed reassessment. Specifics of AWAKE cause additional safety issues, including the underground use of oil and Rubidium, and the running of electron source and laser during general installation periods. This presentation shows how chemical, electrical, fire, evacuation and radiation safety issues were addressed during the design phase and how their solutions were implemented, leading to a successful start-up of AWAKE's protons-plus-laser operation in December 2016 and the preparation towards for operating AWAKE safely with protons, laser and electrons from 2018 on.

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