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Tritium Mitigation for the LBNE Beamline

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The production of tritium is a radiological concern in the operation of the Long Baseline Neutrino Experiment (LBNE) beamline. This
experiment aims to send a high intensity neutrino beam from Fermilab to a detector located approximately 1300 km away in South Dakota. The high power 120 GeV proton beam incident on a 95 cm graphite target will produce significant amounts
of tritium in and around the target hall facilities.
Although sufficient shielding can
minimize the amount of tritium generated in the environment, tritium's mobility requires special care in designing the beamline facilities. Sufficient precautions can minimize the transfer to the enviroment of tritium generated in the concrete shielding.
Tritium which is either generated in or transfered to fluid or gasseous mediums needs to be either contained or released in a manner which will not violate any
State or Federal environmental regulations.
Presented will be an overview of the predicted impact of tritium on the LBNE beamline and the methods that will be used to manage the exposure of the environment.

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