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SNS Second Target Station proton accelerator shielding design and accident scenario evaluation

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Design of the Second Target Station (STS) for Oak Ridge National Laboratory's (ORNL) world-class Spallation Neutron Source (SNS) Facility is underway. The STS will provide an optimized high-brightness cold neutron source for up to 18 new beamlines, both expanding and complimenting the current neutron science capabilities at ORNL. The Ring to Second Target beam Transport (RTST) will deliver a 700kW beam of 1.3GeV protons at 15Hz to a rotating target composed of individual water-cooled tungsten wedge segments. Spanning roughly 220m, the RTST will consist of 56 quadrupole focusing magnets and 15 dipole bending magnets. Installation and maintenance of large beamline components will be facilitated via a truck access tunnel. While the proton accelerator is in operation, the truck access tunnel entrance is shielded by an arrangement of stacked steel shielding blocks. This shielding design must account for both normal operating conditions as well as design-basis accident scenarios. Provided in this work is an analysis of the accelerator truck access tunnel shielding design for a worst-case full beam loss accident scenario.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

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Yes

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