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Neutrino-Induced Neutron Detectors at the Spallation Neutron Source SAMUEL HEDGES, Duke University, COHERENT COLLABORATION — Neutrino-nucleus interactions can produce excited nuclear states that can de-excite by emitting particles, including neutrons. Neutrino-induced neutrons (NINs) produced in common gamma shielding material, such as lead or iron, can pose a background for neutrino and dark matter experiments. Additionally, NIN production in lead is the primary mechanism for the Helium and Lead Observatory (HALO) to detect supernova neutrinos, and iron-based supernova NIN detectors have been proposed. Two detectors seeking to study NIN production in lead and iron have been deployed to the Spallation Neutron Source (SNS), where neutrinos are produced with an energy similar to that of supernova neutrinos. An overview of the detector design and current status will be presented.

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