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Measurement of Neutron Polarization and Transmission for the nEDM@SNS Experiment.

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The neutron electric dipole moment experiment at the Spallation Neutron Source (nEDM@SNS) will implement a novel method, which utilizes polarized ultra-cold neutrons (UCN) and polarized ^{3}He in a bath of superfluid ^{4}He, to place a new limit on the nEDM down to 2-3$\times 10^{-28}$ e·cm. The experiment will employ a cryogenic magnet and magnetic shielding package to provide the required magnetic field environment to achieve the proposed sensitivity. I will present the design and implementation of a ^{3}He polarimetry setup at the SNS to measure the monochromatic neutron polarization and transmission losses resulting from passage through the magnetic shielding and cryogenic windows.

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