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nEXO's Outer Detector: Status and Prospects

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The nEXO experiment is a proposed neutrino-less double beta decay ($0\nu\beta\beta$) search in the isotope Xe-136. Anticipated to be located at SNOLAB, nEXO aims to observe the Majorana nature of neutrinos with a sensitivity that will probe the entire inverted mass hierarchy parameter space. nEXO's stringent low-background requirements necessitate a water shield in order to reduce contributions from external radiation. Photomultiplier tubes inside the water will also measure Cherenkov light of passing muons; this active shield is referred to as the Outer Detector. We present the status of Monte Carlo simulations, the instrumentation plan, and muon veto capabilities of the Outer Detector. We also discuss the Outer Detector's potential as a supernova neutrino observatory with a focus on the inverse beta decay interaction channel on hydrogen in the water.

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