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Scintillation photon detection in liquid argon at the Long-Baseline Neutrino Facility BRUCE HOWARD, BRICE ADAMS, BRIAN BAUGH, Indiana University, NORM BUCHANAN, Colorado State University, LEN BUGEL, JANET CONRAD, Massachusetts Institute of Technology, RONALD DAVIS, Fermi National Accelerator Laboratory, MARK GEBHARD, MICHAEL LANG, Indiana University, BILL MINER, Fermi National Accelerator Laboratory, STUART MUFSON, JAMES MUSSER, Indiana University, STEPHEN PORDES, BRIAN REBEL, Fermi National Accelerator Laboratory, PAUL SMITH, Indiana University, MATT TOUPS, Massachusetts Institute of Technology, JON URHEIM, Indiana University, DAVID WARNER, Colorado State University, TARITREE WONGJIRAD, Massachusetts Institute of Technology, DENVER WHITTINGTON, Indiana University — The proposed Long-Baseline Neutrino Facility (LBNF) aims to answer outstanding questions relating to neutrino physics and other phenomena, such as proton decay and supernova neutrinos. The proposed far detector design calls for a multi-kiloton liquid argon time-projection chamber at a long baseline. In addition to its utility as a target material, liquid argon scintillates in the far UV, providing further physics information and serving as a trigger for non-beam events. The photon detection system in development for the LBNF far detector includes a mechanism for capturing and transporting the light, a method to detect the photons (silicon photomultipliers), and the necessary readout electronics. Testing in liquid argon has occurred at the "TallBo" facility at Fermilab to characterize and compare the performance of these systems. In this talk, we present the details of these photon detection systems and the latest results of testing.

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