There are strong motivations for a detectable flux of ultra-high energy (UHE) cosmic neutrinos above $10^{17-18}$ eV both from cosmic ray interactions with cosmic microwave background photons and from UHE sources. The radio Cerenkov technique is the most promising technique for instrumenting a detection volume large enough to detect the low expected fluxes. The ANtarctic Impulse Transient Antenna (ANITA) is a balloon-borne antenna array that searches for radio impulses from neutrino interactions from 37 km above the Antarctic ice sheet. Its third flight under NASA’s long-duration balloon program is planned for the end of 2013. The Askaryan Radio Array (ARA) is an antenna array being deployed at 200 meter depth near the South Pole. The first stations of a proposed 100 km$^2$ area array have been deployed in the past three Antarctic summer seasons. I will present constraints on ultra-high neutrino fluxes from each experiment, which include the world’s best limits above $10^{19}$ eV from ANITA and the first ARA neutrino limit, the latter only just released this year. I will also describe how these experiments could measure neutrino-nucleon cross sections at energies that exceed those probed by the LHC.