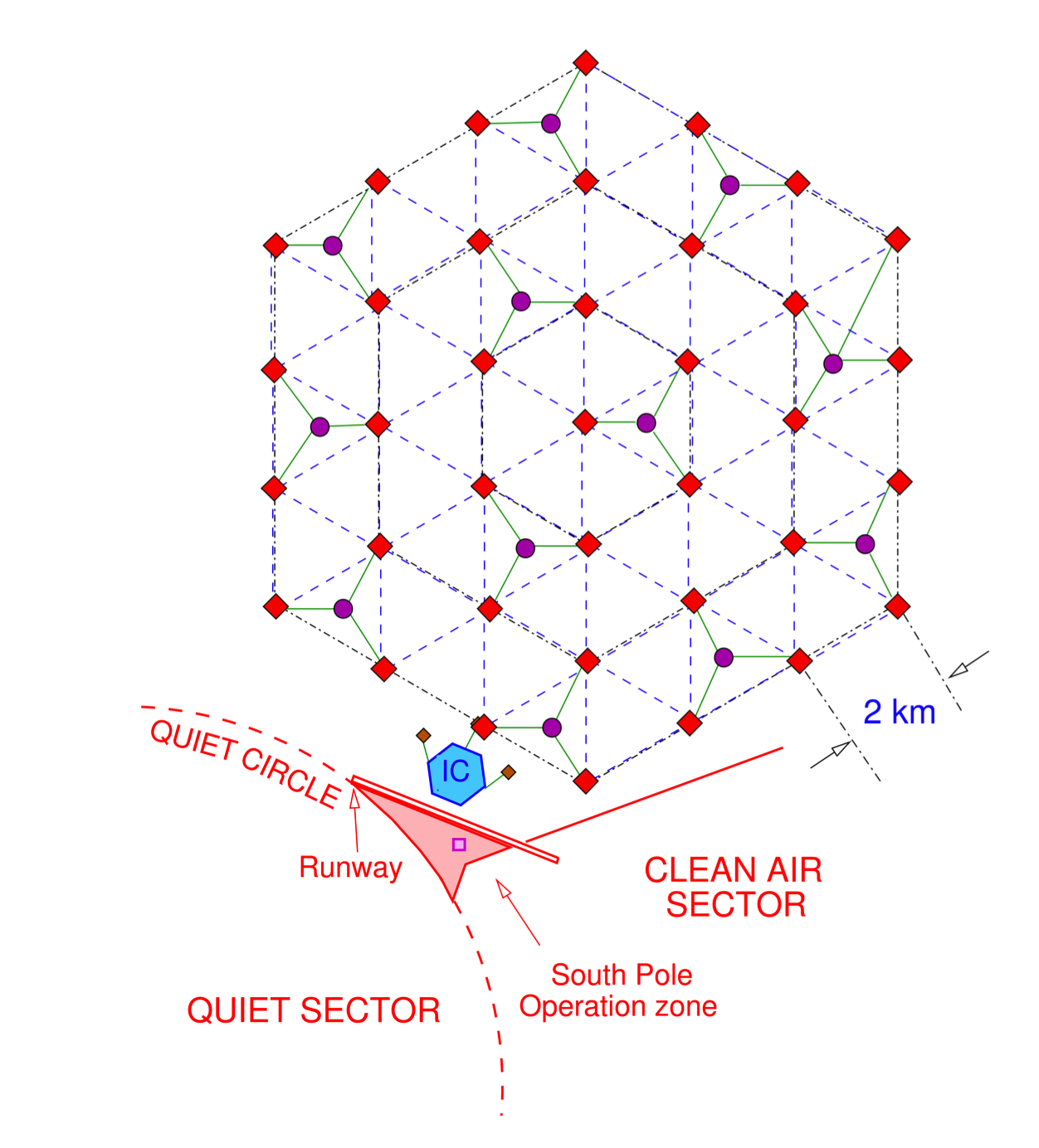
Album Caption: The Askaryan Radio Array (ARA) is under construction at the Amundsen-Scott South Pole Station and is designed to look for neutrinos produced when cosmic rays interact with the cosmic microwave background radiation.

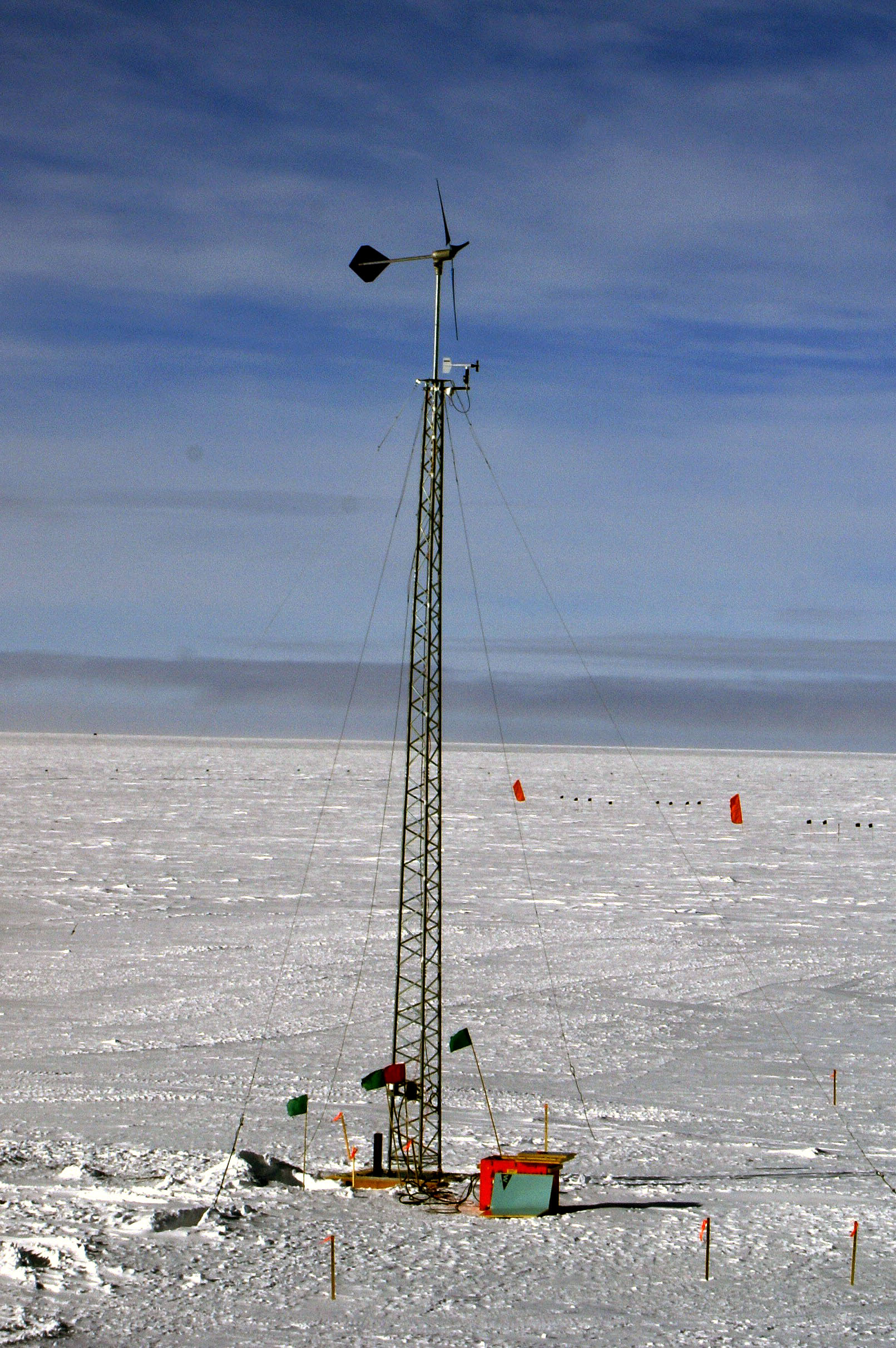
# Image: 01-ara-20120423-frontcommunications:WIPAC:WIPAC_web:WIPAC_content:6-News_WIPAC:6.2-multimedia_news:ARA_construction:1-ara-20120423-front.jpg

The South Pole’s harsh climate has its challenges for construction but is an ideal location for radio detection of neutrinos. Radio waves travel long distances in the cold, Antarctic ice and the South Pole is one of the most radio quiet places on earth.   
credit: K. Hoffman/NSF

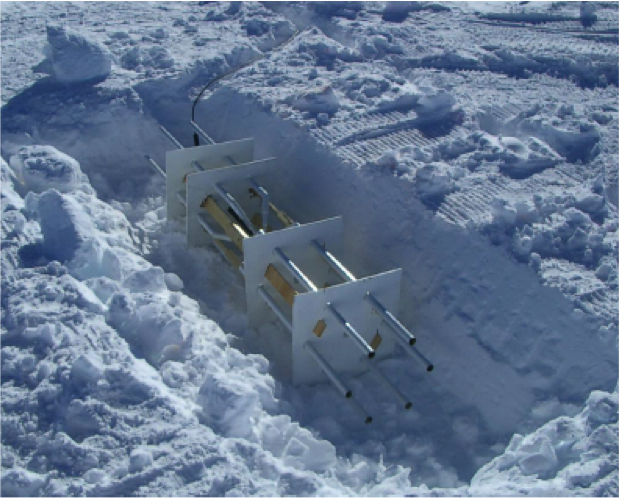
1. Image: array.png:

ARA is in prototype phase with the full array planned to cover nearly 100 square kilometers. Two stations have been deployed at the South Pole. ARA is designed with 37 stations in a triangle-grid array with 2km between stations. This arrangement is optimized for discovery.   
credit: ARA Collaboration

1. Image: DSC01251-a:

The two stations currently deployed at the South Pole are studying noise levels, ice properties, reconstruction algorithms, and calibration techniques. Estimated completion of the full-scale detector is in 2018.   
credit: Mike DuVernois/NSF

1. Image: antenna

ARA stations each include 6 holes about 200 meters deep. The holes contain 4 receivers-units and 2 calibration-units. Each receivers-unit includes two vertically polarized and two horizontally polarized antennas. Here a \_\_\_\_\_\_\_ lays in the snow prior its deployment.

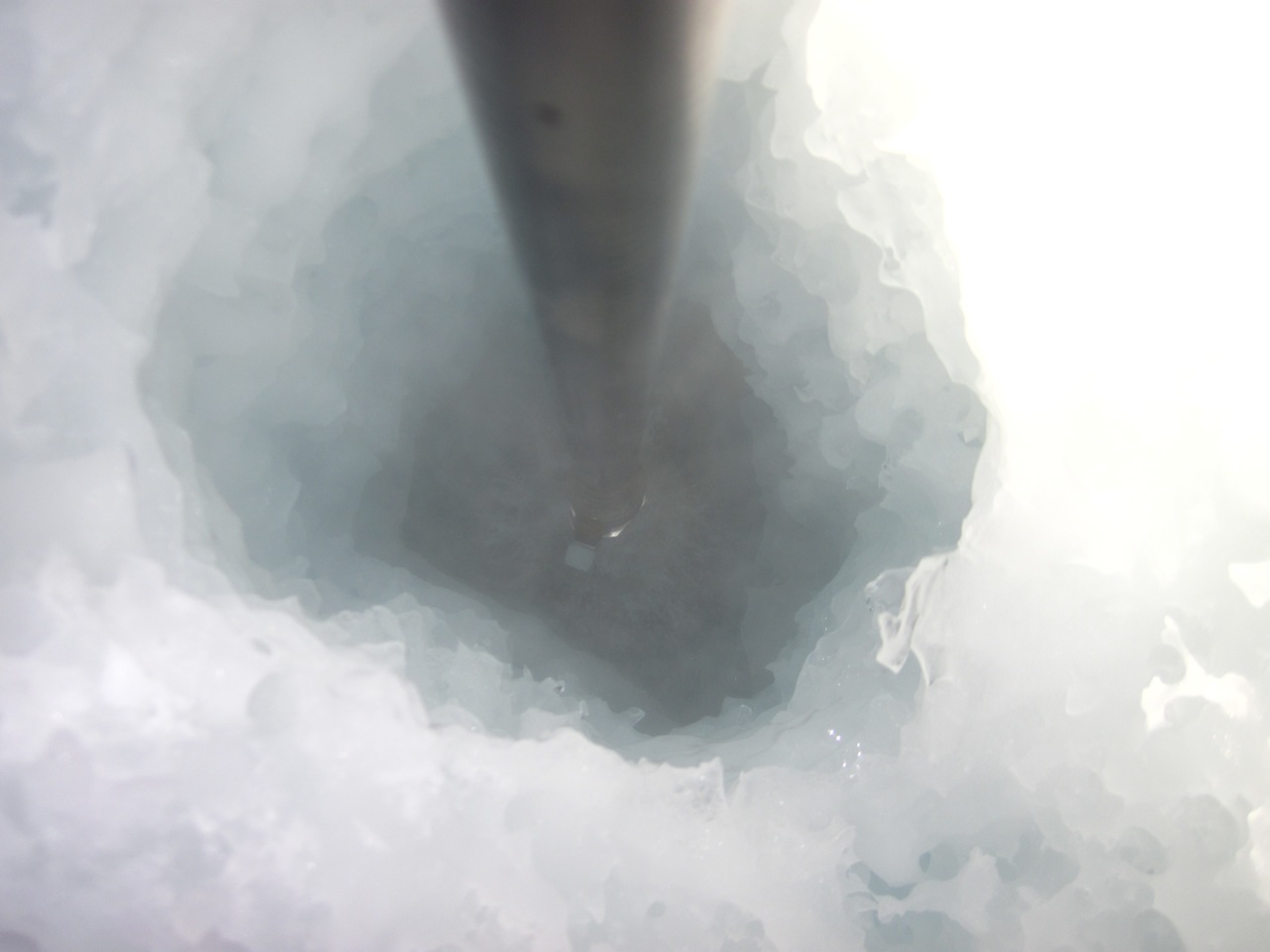
credit: ARA Collaboration

1. Image: 01-02-11 037

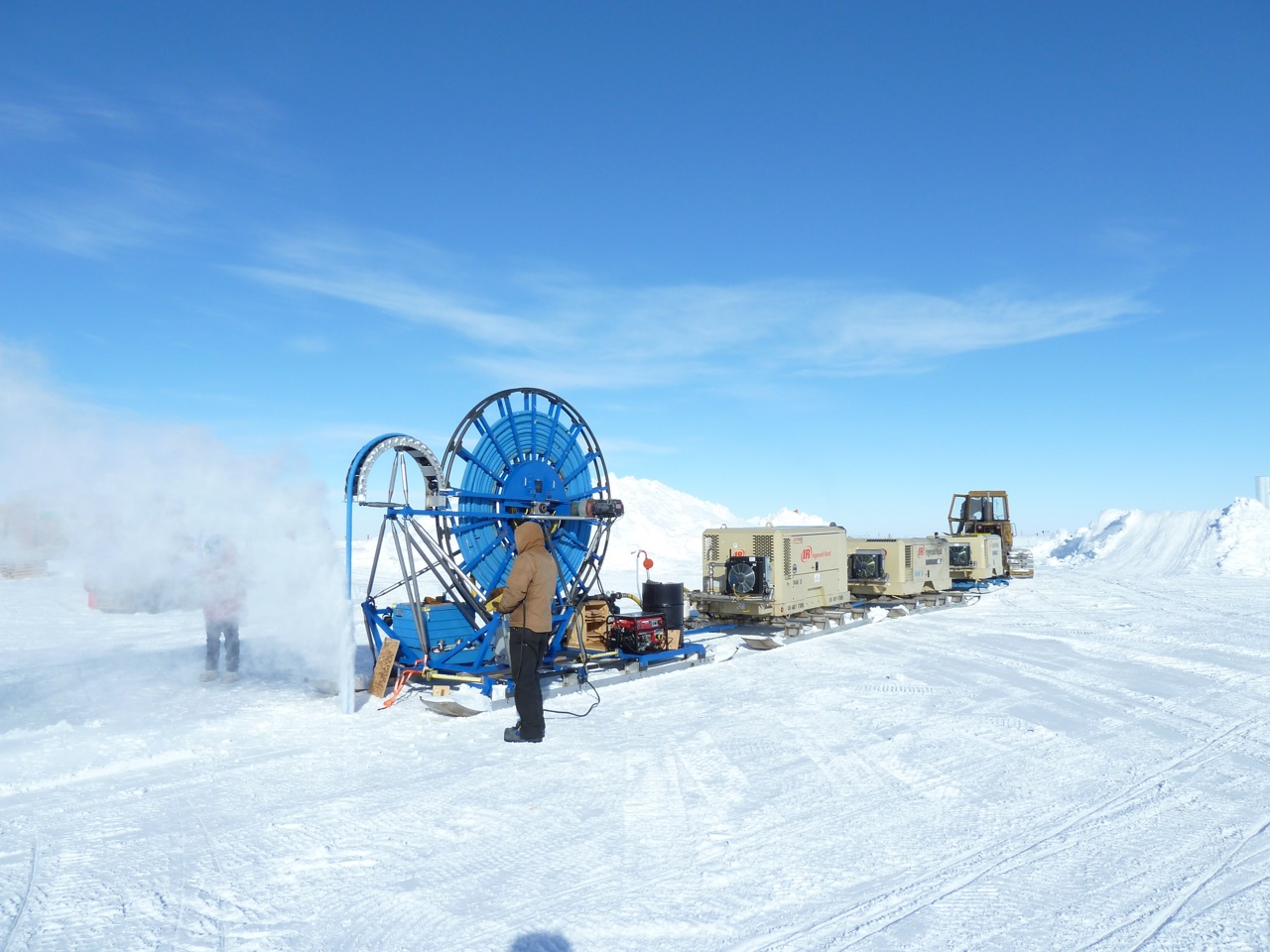
ARA is currently testing out two drills, the Rapid Air Movement (RAM) and a modified version of the Enhanced Hot Water Drill (EHWD). The EHWD was designed for IceCube drilling and was used during the 2011-2012 season to drill holes six inches in diameter for the ARA test bed antenna.

credit: ARA Collaboration

1. Image: 06-01-02-11 087

The EHWD requires hoses to pull the water out of the hole during the drilling process. These holes are about 160 meters deep and took about five hours to drill.

credit: ARA Collaboration

1. Image: TIPP duvernois RAMdrill

The RAM drill is new at the South Pole and uses compressed air to extract hole-shavings. This produces a dry hole 4 inches in diameter. A 60-meter hole only took 15 minutes to drill.

credit: ARA Collaboration

1. Image: news-20120423-ara-turbine

ARA is attempting to save energy and funds by outfitting the detector with wind turbines and solar panels to help power their remote stations. Here a solar panel rests on top of a gearbox before getting installed next to a prototype wind turbine.   
credit: Laurel Norris/NSF