Fermilab makes use of a single-cavity test cryostat to assess the performance of dressed superconducting RF cavities using pulsed high-power RF before they are assembled into a cryomodule. Cavity performance is evaluated in terms of accelerating gradient, unloaded quality factor, and field emission. The functionality of auxiliary components such as tuners and fundamental power couplers is also verified. The latest results from extensive testing of nine-cell 1.3 GHz cavities are presented here, along with a discussion of future extensions of the horizontal test program to include 650 MHz cavities and continuous wave testing.

Summary of all dressed cavity tests. TB9ACC013 and TB9ACC016 experienced failures of the copper plating in their input couplers. TB9AES007 and TB9RI024 had FE problems that are being investigated. TB9RI029 quenched early for unknown reasons. All other cavities performed as well as they did in their vertical tests.

A new test cryostat is being designed at RRCAT in India that will be long enough to house two cavities or a cavity + magnet package. The new facility (HTS2) will support tests of both 650 MHz and 1.3 GHz cavities and will be capable of both CW and pulsed testing.