

*** Tray Thermal test activity *** November 22, 2002

Since Monday we are in TERNI to perform thermal tests on one standard and on one thick-converter tray housed in the service boxes.

We positioned 10 strain-gauges, 5 on the top side and 5 on the bottom side of both trays: we used 8 strain-gauges with quartz reference and one with silicon reference (the tenth channel on the top was not measured).

After some preliminary measurements, we cycled the thick-converter tray at survival range (-30°C+50°C) with a temperature changing rate of 20°C/h and 4.5h plateau at the two extremes. We decided to increase the plateau time from 4h to 4.5h to take into account the observed delay between the oven temperature and the tray temperature inside the box.

In the attached picture you can find the results of strain and temperature. Two thermocouples were positioned on the tray, TC0 on the silicon and TC1 on the MCM close-out.

We also report the chamber temperature where you can see the delay between the measurements. The visual inspection didn't show any damage.

We plan to start 4 survival cycles on the same tray, and after that the same test will be performed on the standard tray.