

L-Band Test Stands in ESB

Carsten Hast

Test Facilities Department

Helps to develop and test near-term solutions for accelerator systems including RF structures and power sources as well as beam optical, diagnostic and collimation systems.

Operates and supports the large test facilities at SLAC

End Station B

NLCTA

X-Band RF

L-band RF → **SNS and Marx Test Stands**

End Station A

FACET

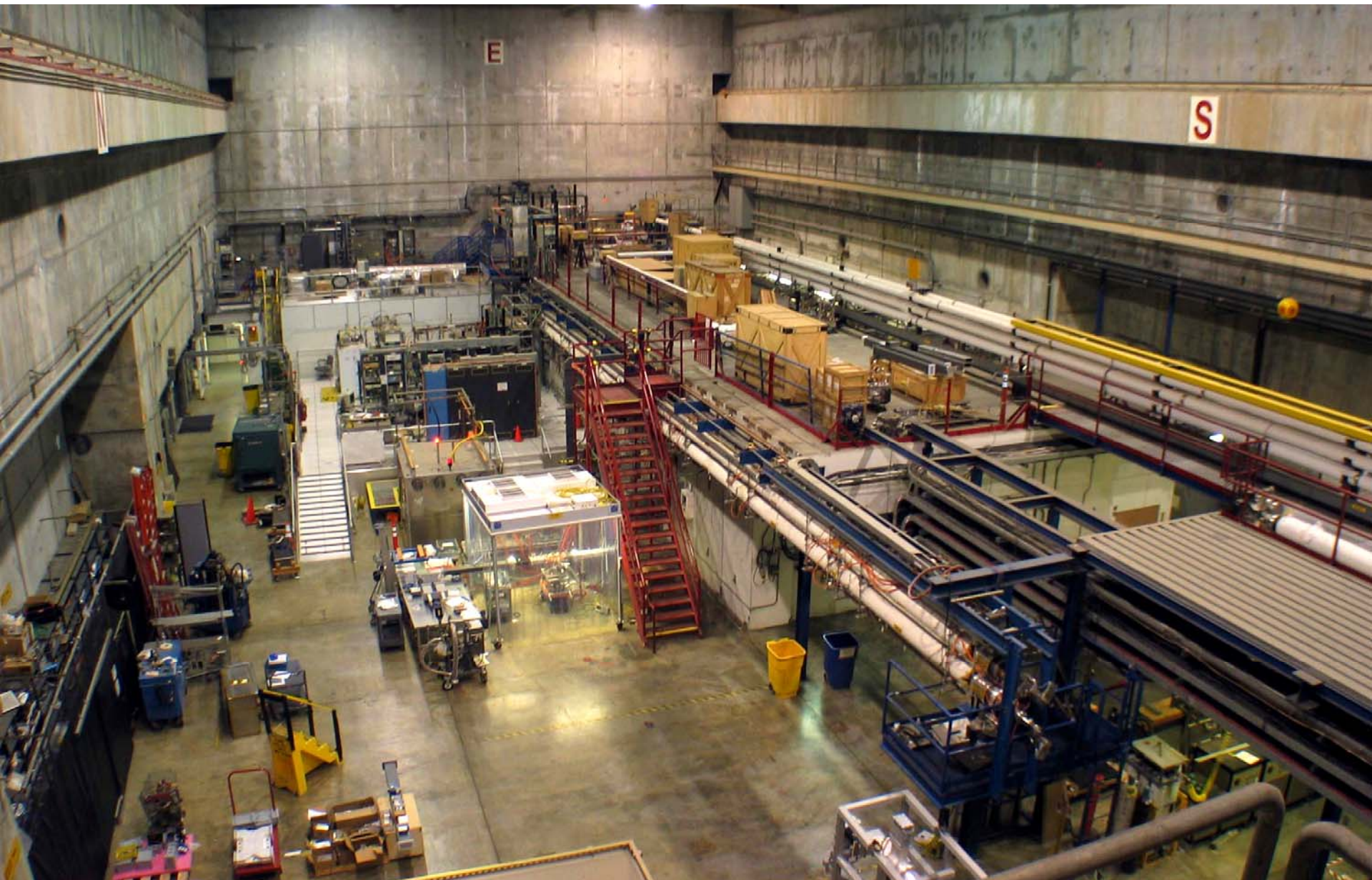
Contributions to ATF/ATF2 program at KEK

Support for LCLS hard- and software development

People

Five engineering physicists, two technicians

End Station B (ESB)



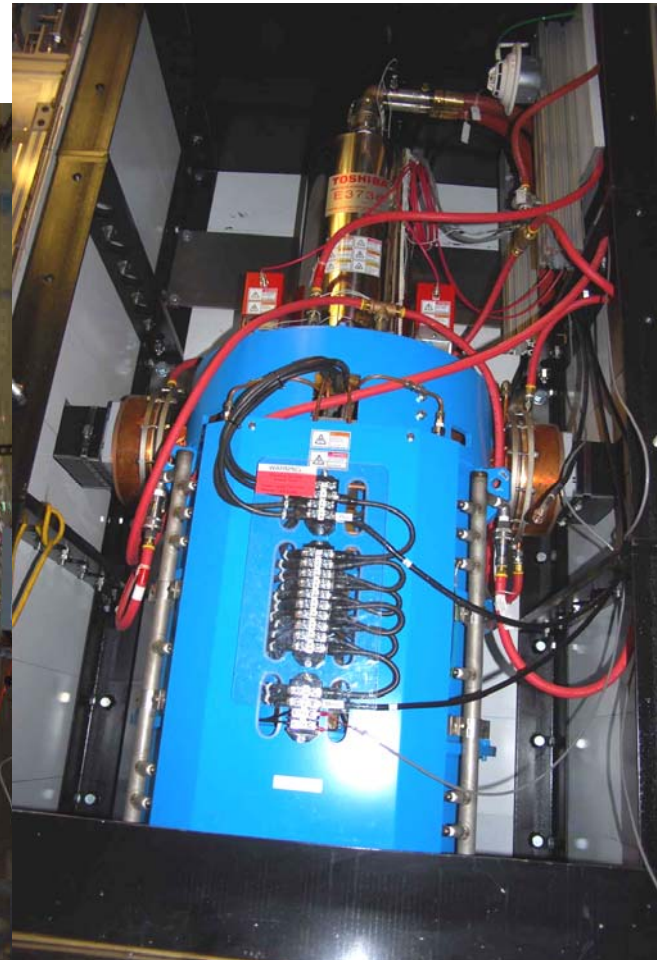
Marx Test Stand

Marx Modulator



Marx Test Stand

Toshiba MB Klystron



Marx Test Stand

Needed to install a new electrical and cooling water infrastructure

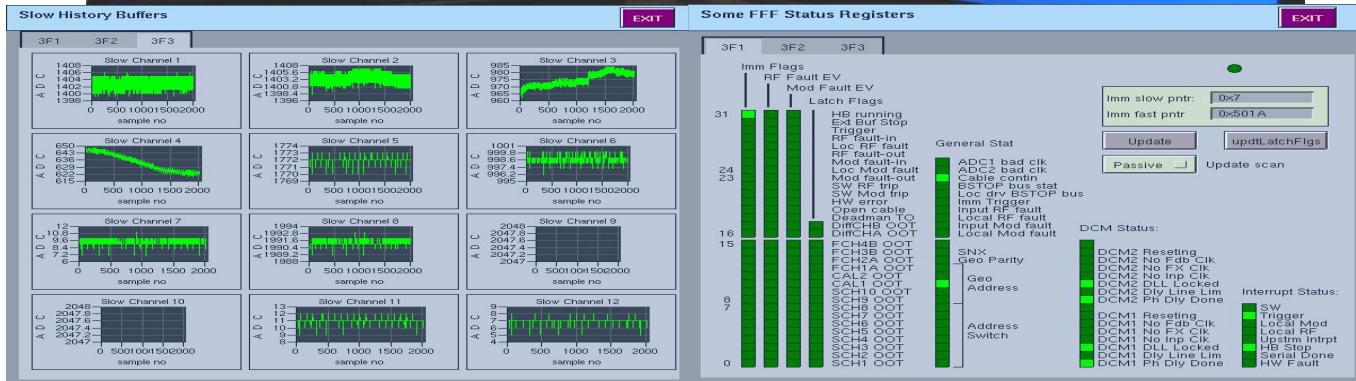
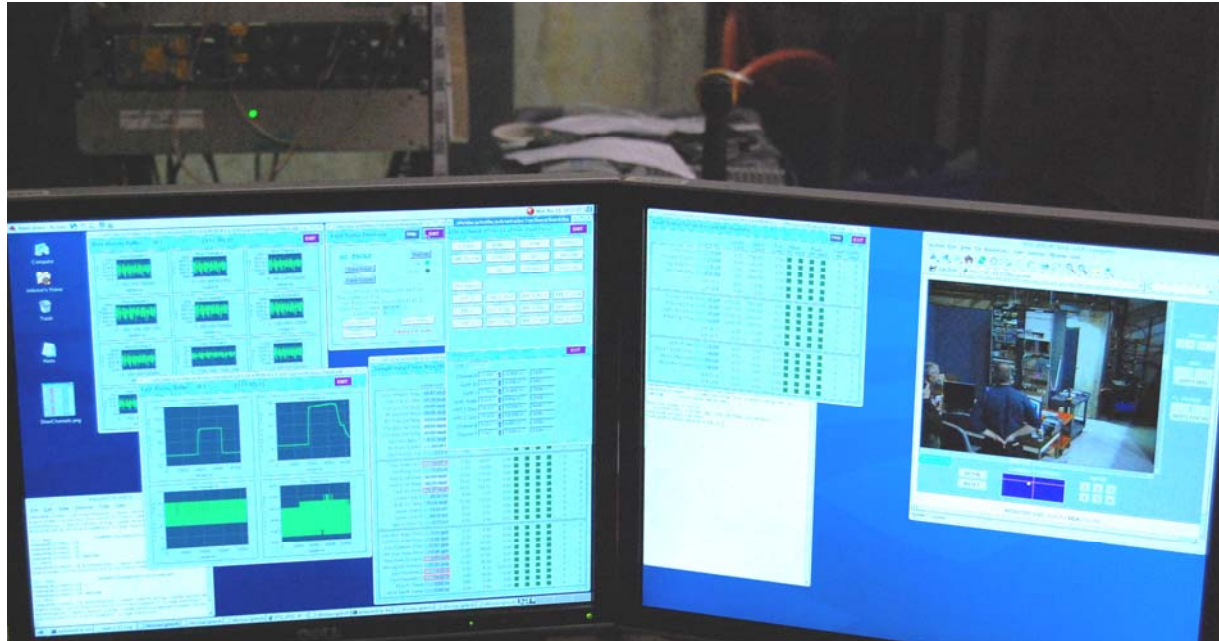


Marx Test Stand

- * Control system for the klystron based on the new Fast Fault Finder F3-Boards.
- * F3-boards have fast inputs to monitor RF and to turn power off within the pulse if a fault occurs
- * F3-boards have slow inputs which monitor the conventional systems (water flow, temperature, magnets, heater, vacuum, etc.).
- * Needed to develop several different styles of signal conditioning and processing.
- * Slow control is backed with a conventional approach using relays



Marx Test Stand



Marx Test Stand

Current Status

- * Marx Modulator functionality and safety systems were thoroughly checked out
- * Klystron F3-slow control and relay based interlock systems were tested and certified
- * Currently finishing a firm ware upgrade in the Marx control software
- * Need to perform spark down tests and verify the F3-board's fast interlocks
- * In about 2 weeks will connect Marx to the MB klystron



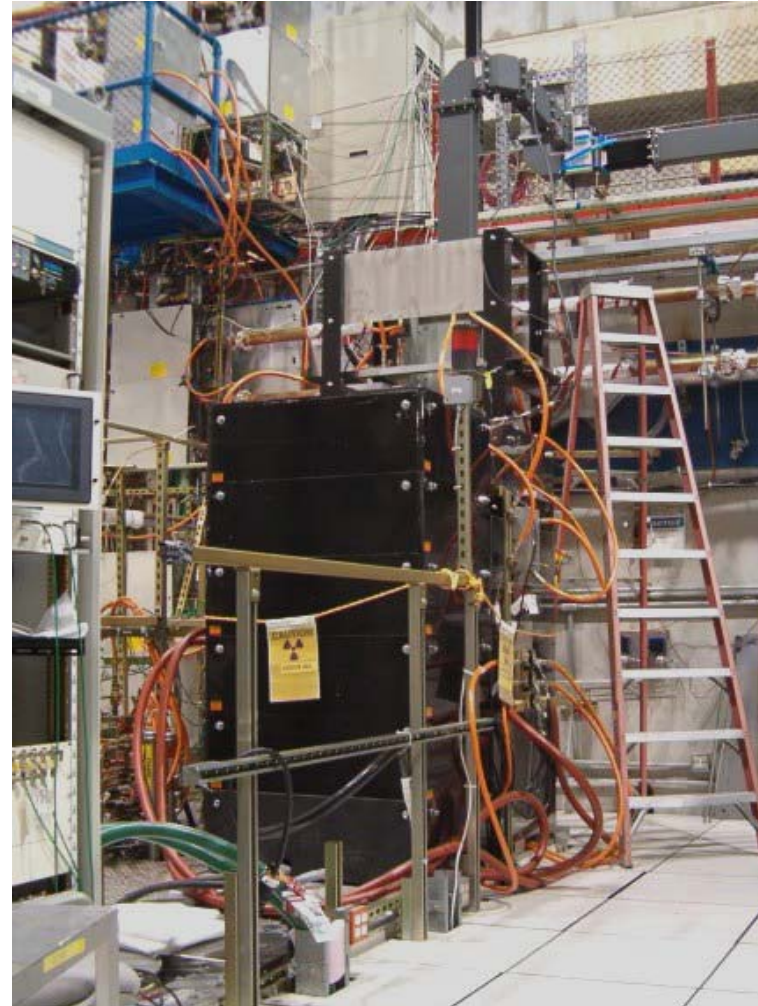
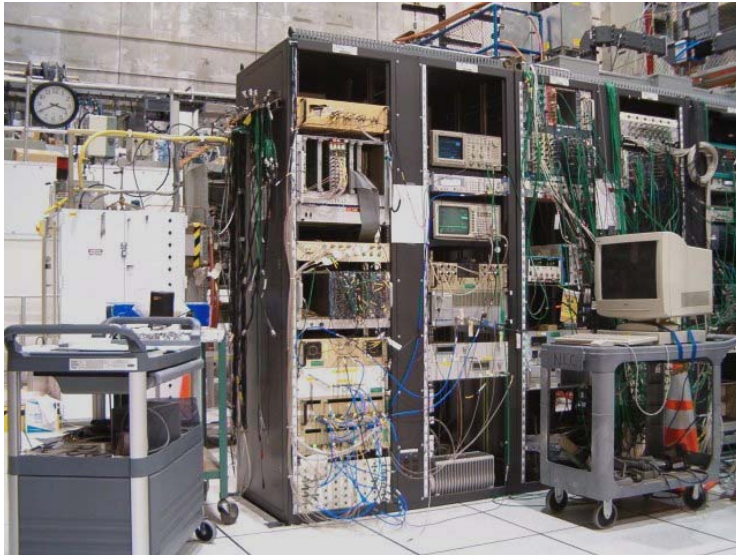
SNS Test Stand

SNS Modulator



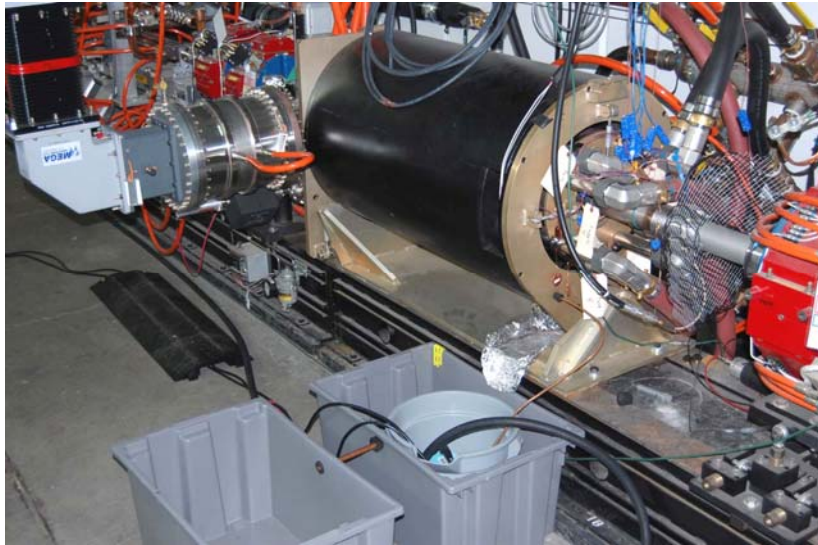
SNS Test Stand

Klystron and Controls

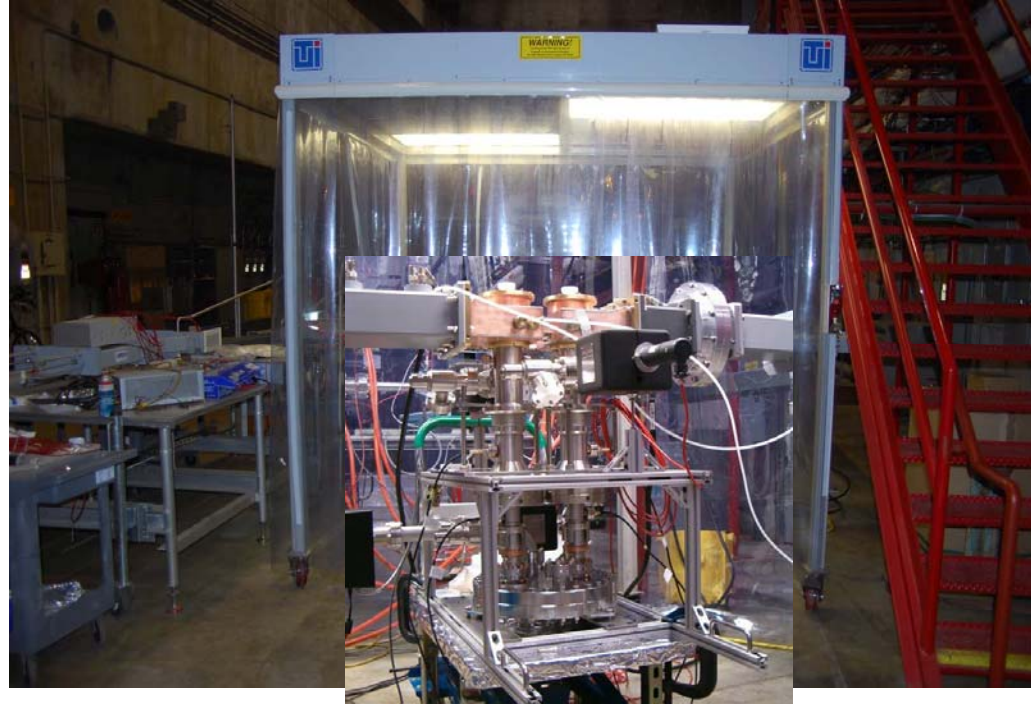


SNS Test Stand

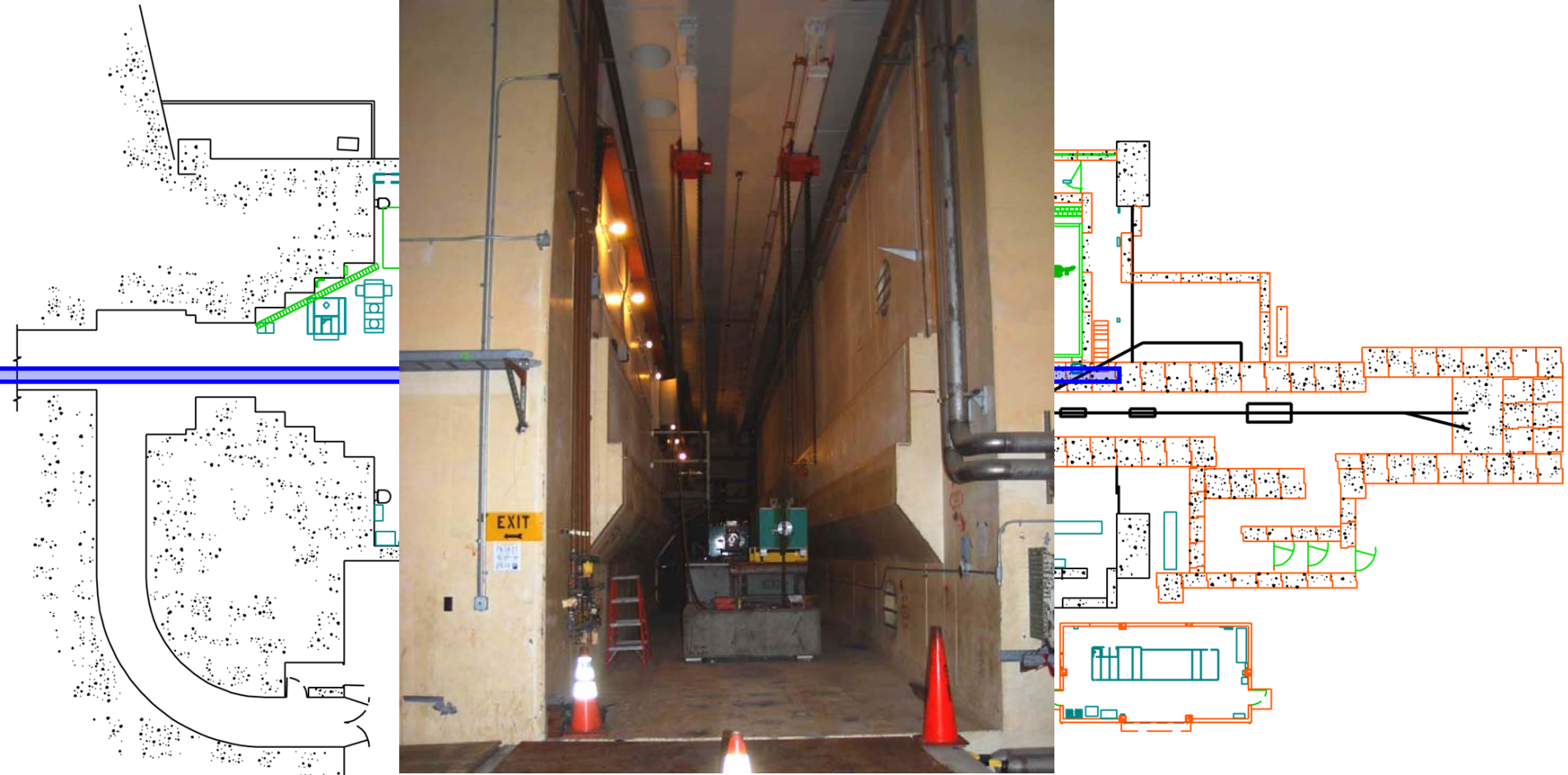
Test area in NLCTA...



...and in ESB



B-Target Room and ESB for KC and CTO Testing



End Station B (ESB)

**You are welcome
to see all that
tomorrow morning
during a tour of
ESB**

