LARP
Hardware Installation and Commissioning

Cryogenic Distribution Boxes and Radiation Absorbers

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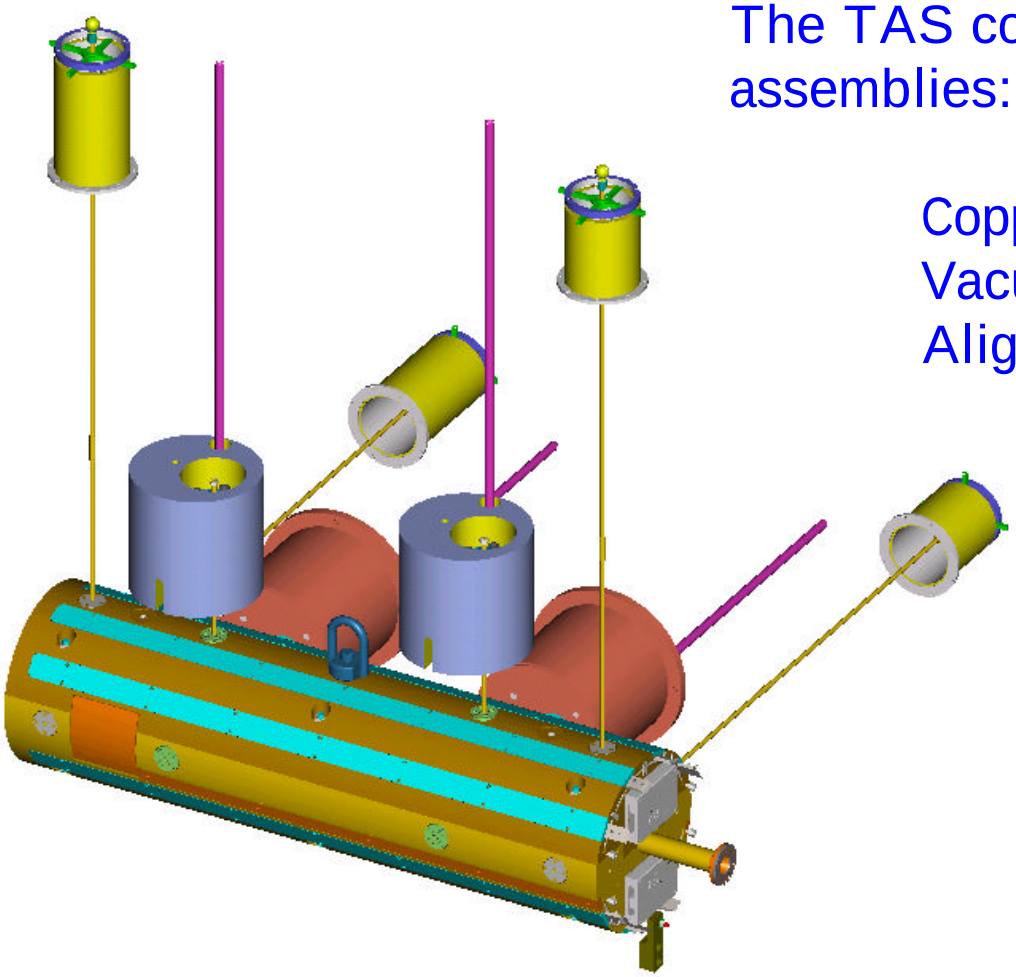
LBNL

April 6-8
Port Jefferson, NY

IR ABSORBER OVERVIEW-TAS



The TAS consists of three major assemblies:

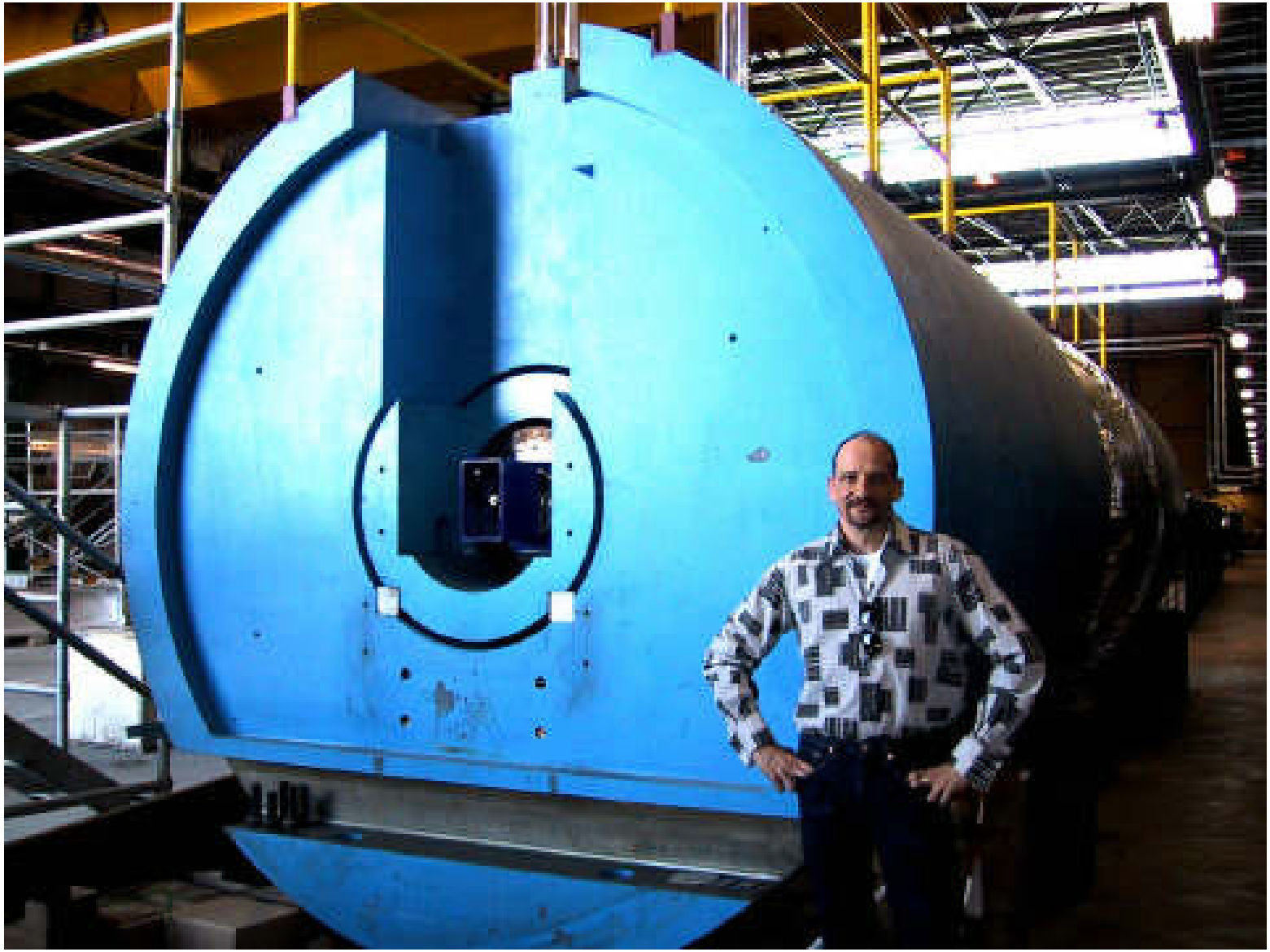
Copper Clamshells
Vacuum Beam Tube
Alignment/support System

TAS Pre-Installation Activities

- On Surface fit-up into the shield
- Check out heaters and backout process
- Beamtube survey and Alignment practice
- Installation of BPM

- CERN started surface fit-up for ATLAS in Mar 05

TAS -ATLAS Installed Inside Shield

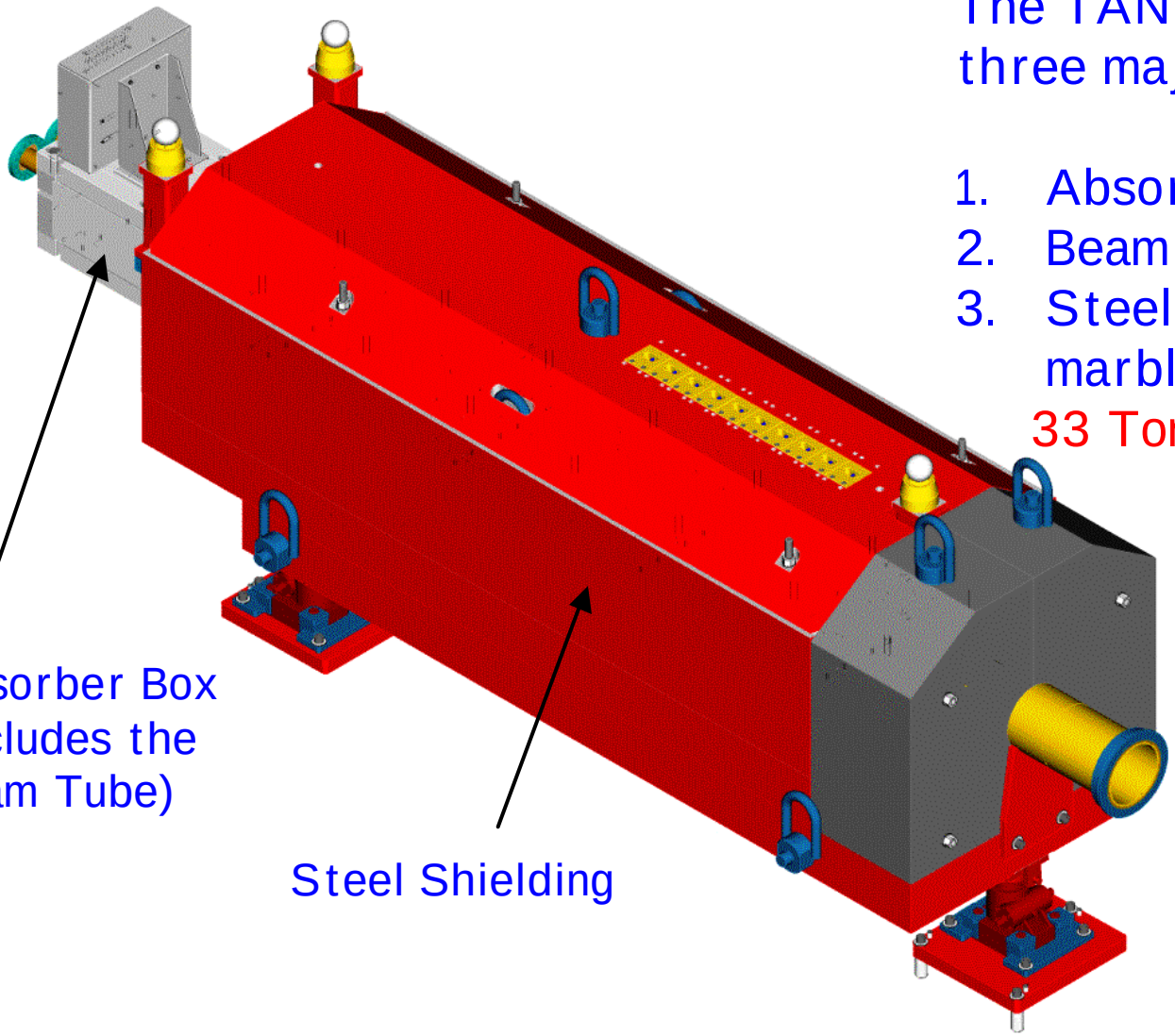


IR Absorber Overview - TAN

The TAN consists of three major assemblies;

1. Absorber box
2. Beam tube, 15 ft long
3. Steel shielding and marble headstone

33 Tons total weight



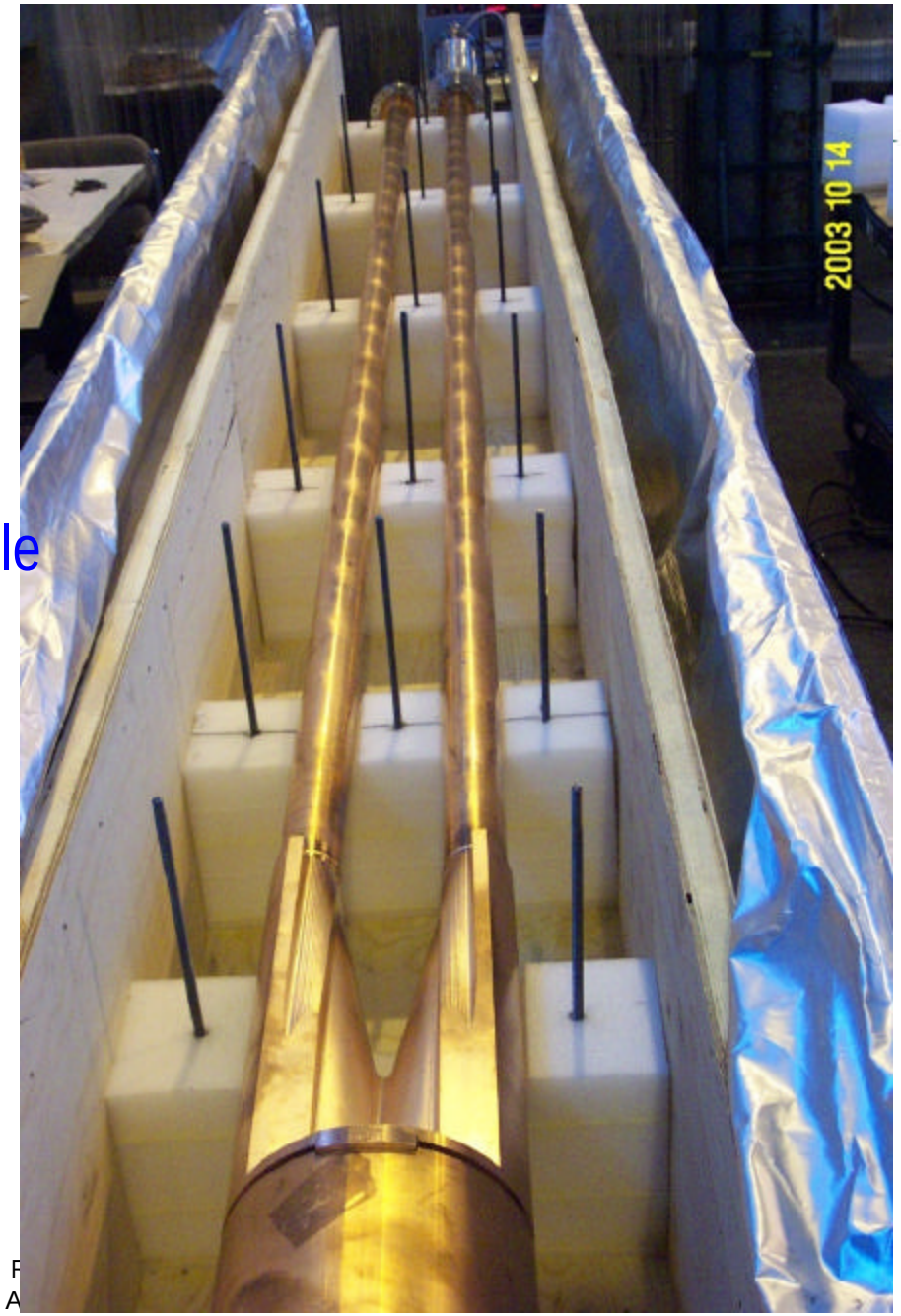
Absorber Box (includes the Beam Tube)

Steel Shielding

Beam Tube

TAN Absorber Fabrication, Assembly and Test are Complete

E-beam weld is complete
Bake out is complete
Vacuum seal qualification is complete
Parts for a spare beam tube is available

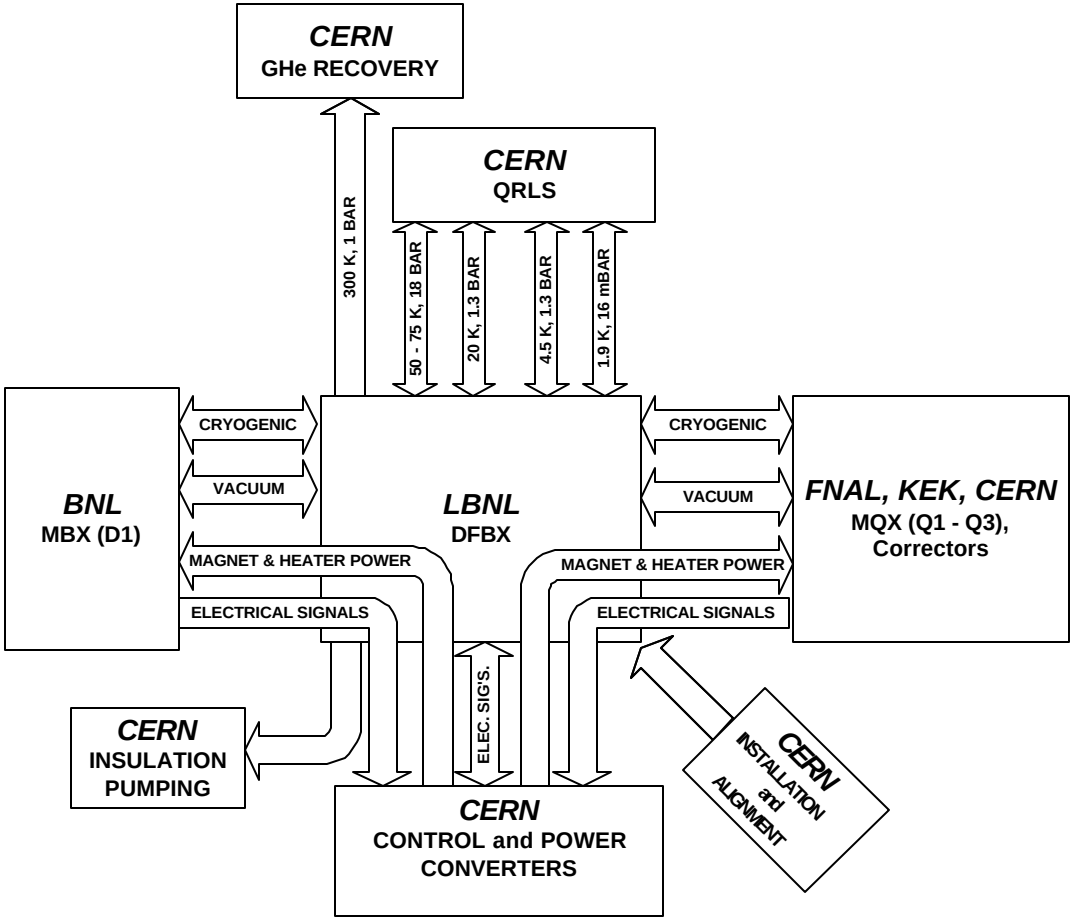


TAN Pre-Installation Activities

- Assemble TAN components together
- Check out heaters and back-out process
- Beamtube Survey and fudialization

- Schedule has not been set yet
- Not sure if they need our help, but we should make sure that the process will go smoothly
- Hopefully this effort will overlap with DFBX installation when LBNL is at CERN

Cryogenic Dist. Boxes (DFBX) Functional Diagram



DFBX Functional Diagram (IP's 2 & 8)

Cryogenic Distribution Boxes, DFBX

- DFBX is the IR hop for magnet Power, controls and cryogenic distribution system
- Complex Flow Schematic and Wiring Diagram

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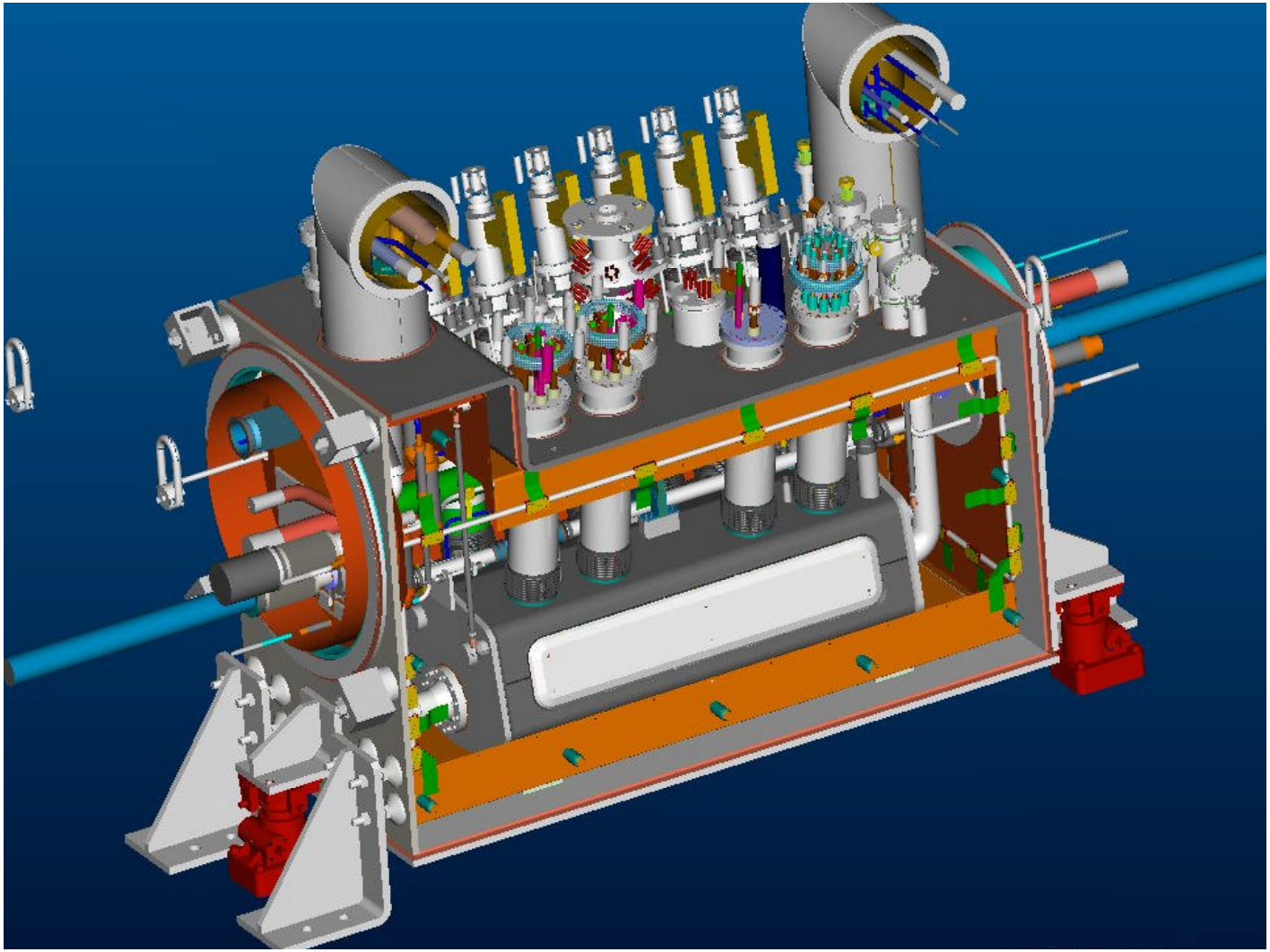
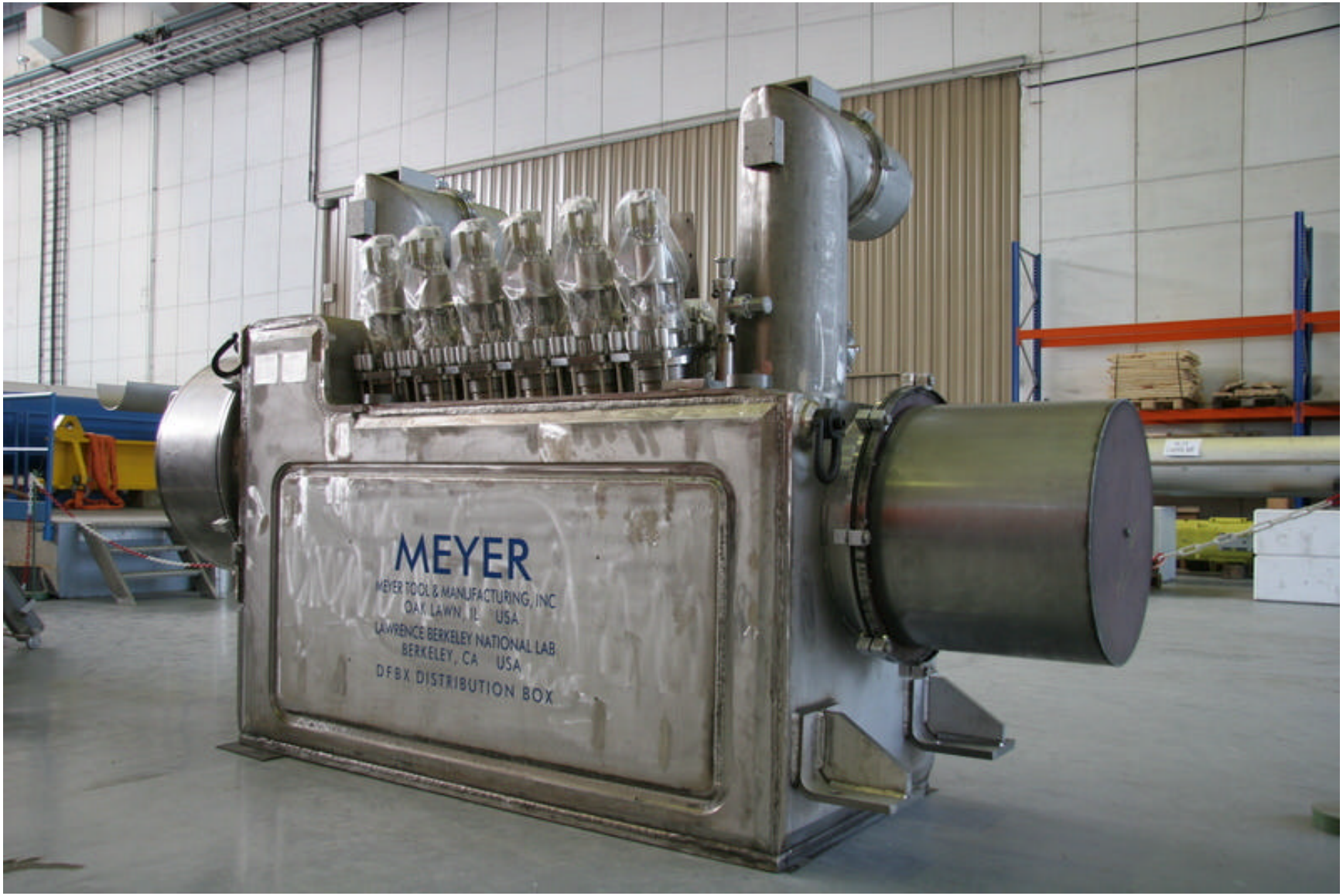
CAD Model of DFBX Illustrates Complexity




MEYER
MEYER TOOL & MANUFACTURING, INC
OAK LAWN, IL USA
LAWRENCE BERKELEY NATIONAL LAB
BERKELEY, CA USA
DFBX DISTRIBUTION BOX

View From Top During Construction

Pre Installation Test Activities

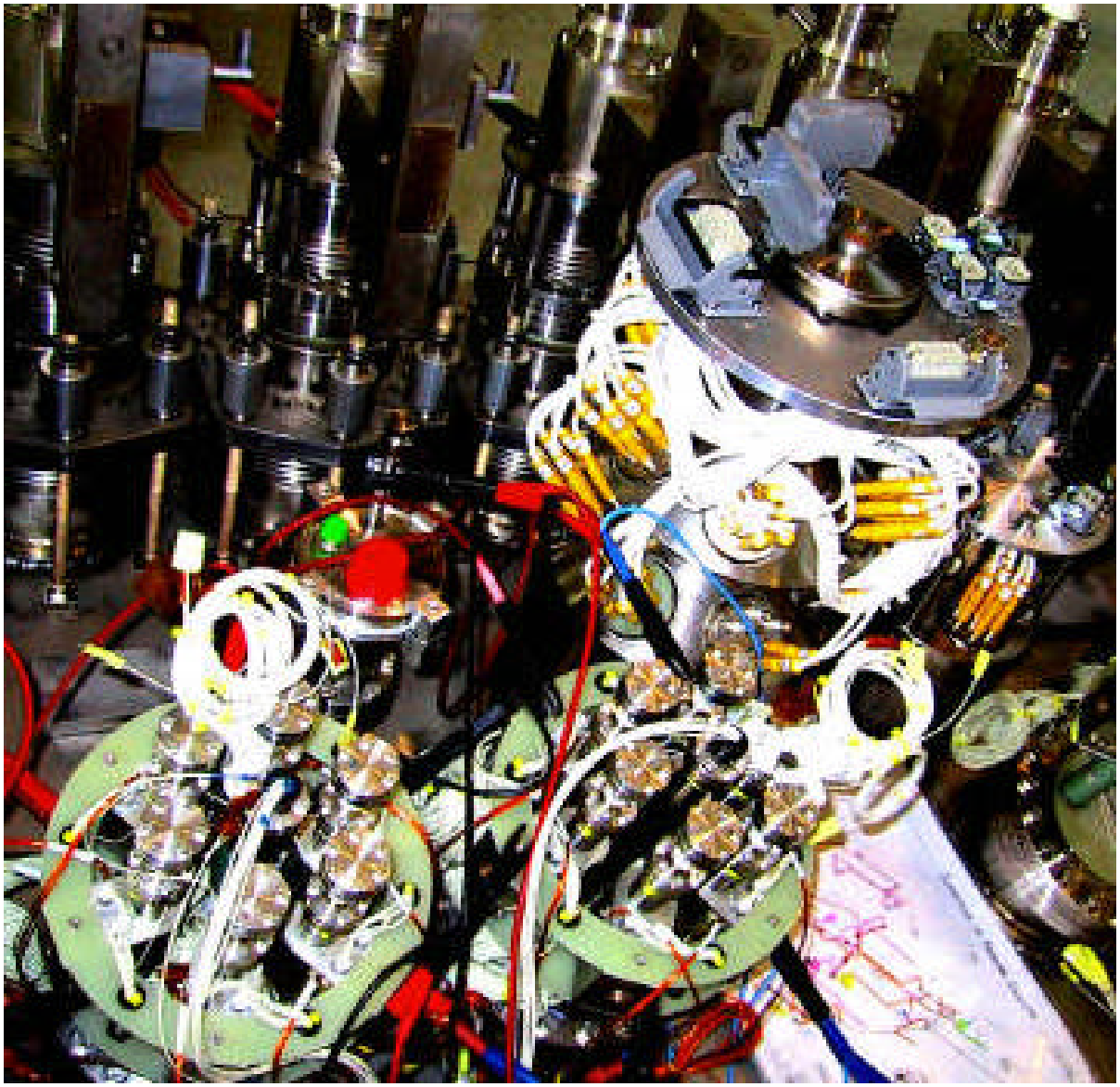
Phase I (complete)

- Vacuum leak tests: All internal piping
- Electrical tests: Hi pot and continuity
- Geometric measurements and Survey: all pipes and flanges
- General Alignment: Fudialization
- Pipe termination and welding interconnect flanges

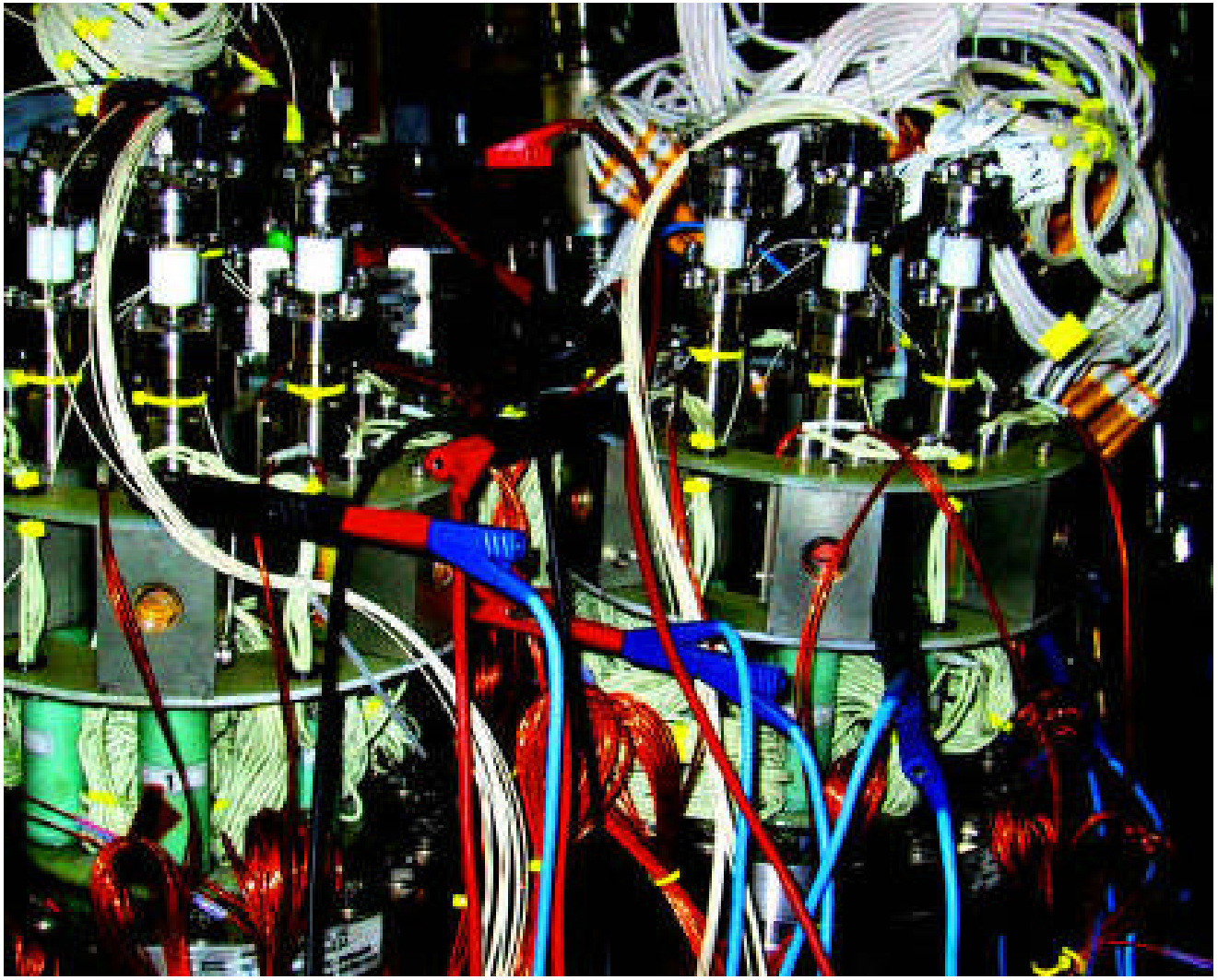
Phase II (scheduled 14-22 April)

- Connect the DFBX to the magnet
- Check interconnect alignment
- Test insulating vacuum

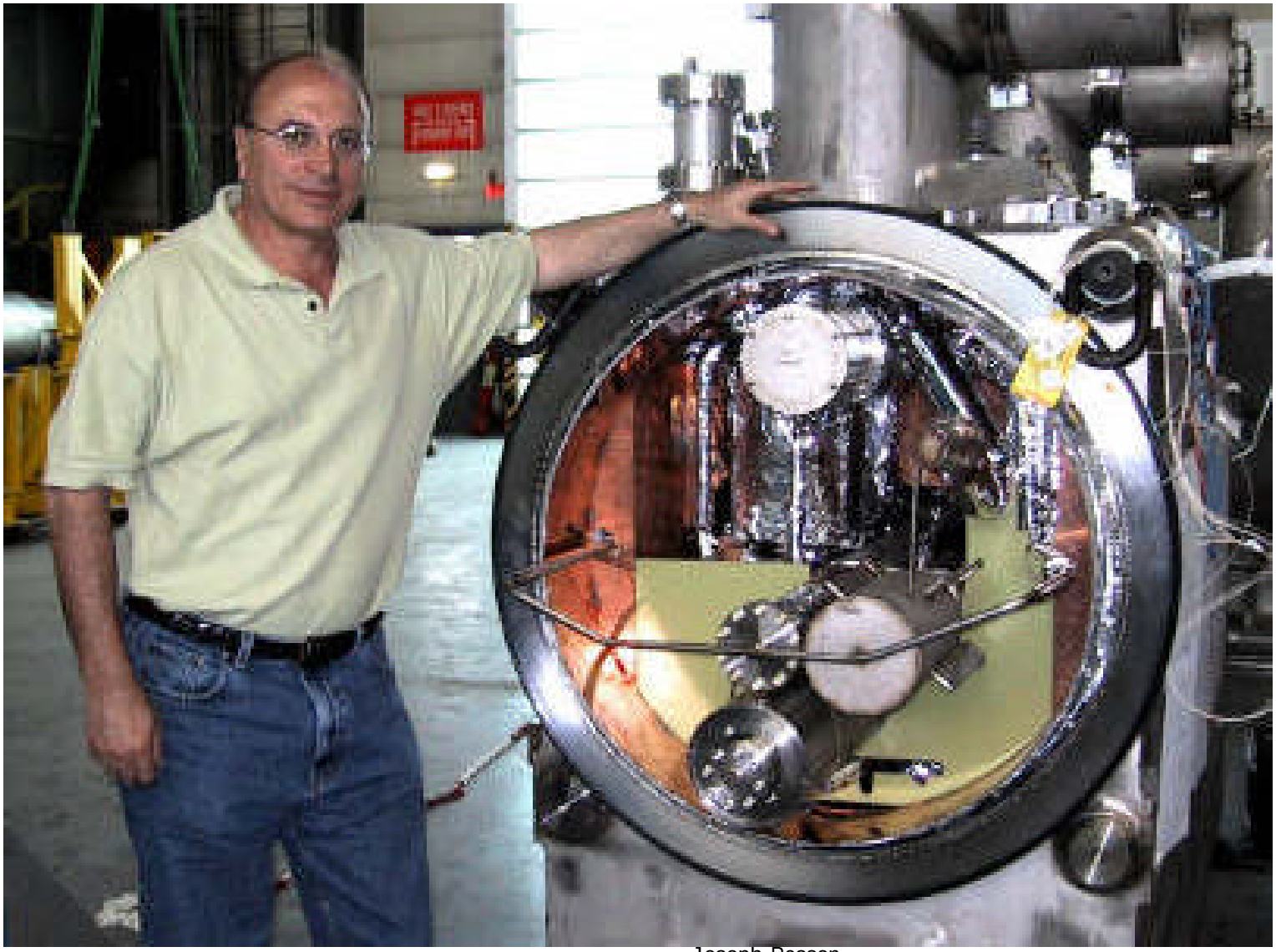
Quads Instrumentation Circuit Test

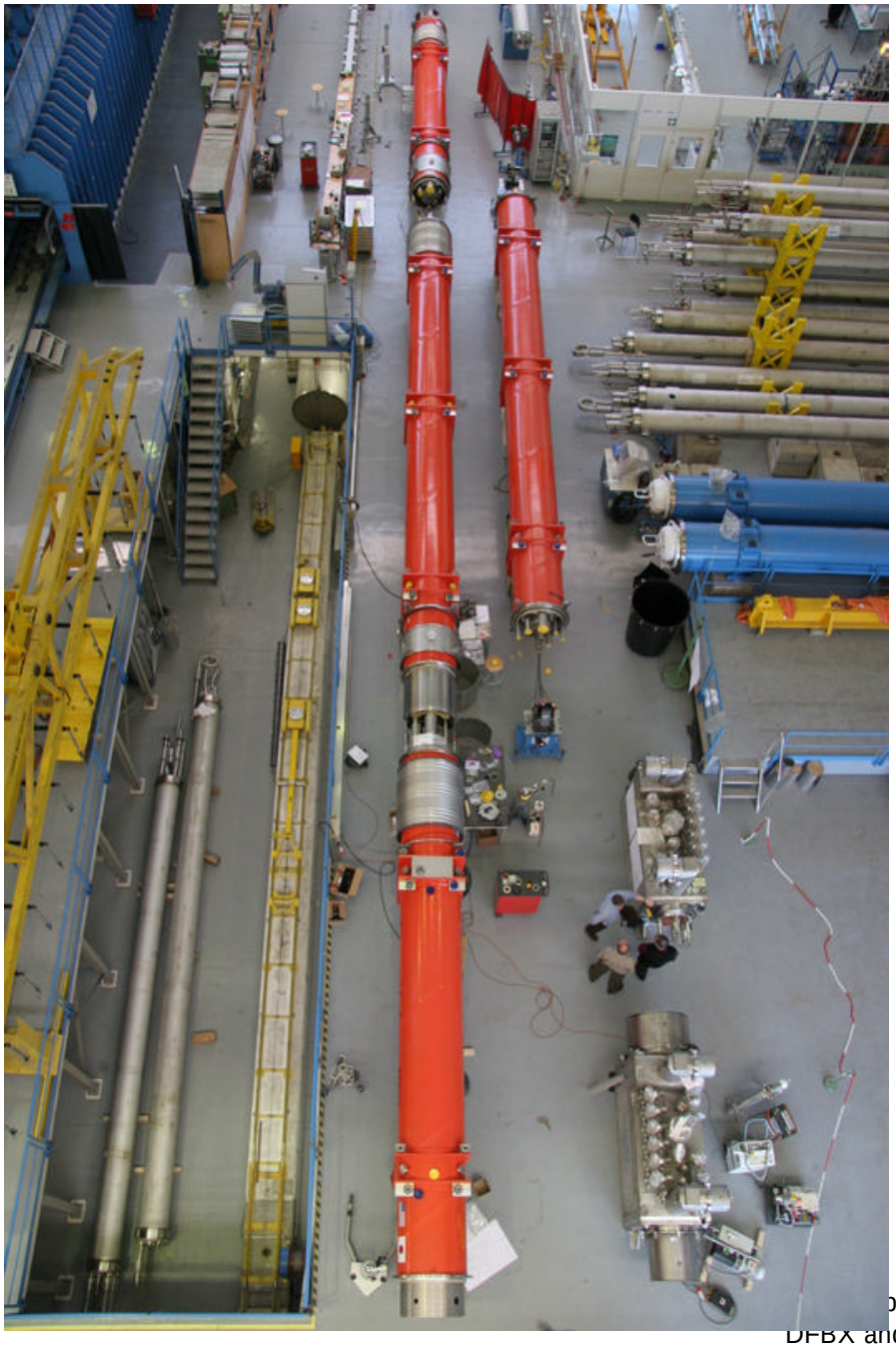


Vapor Cooled Electrical Tests



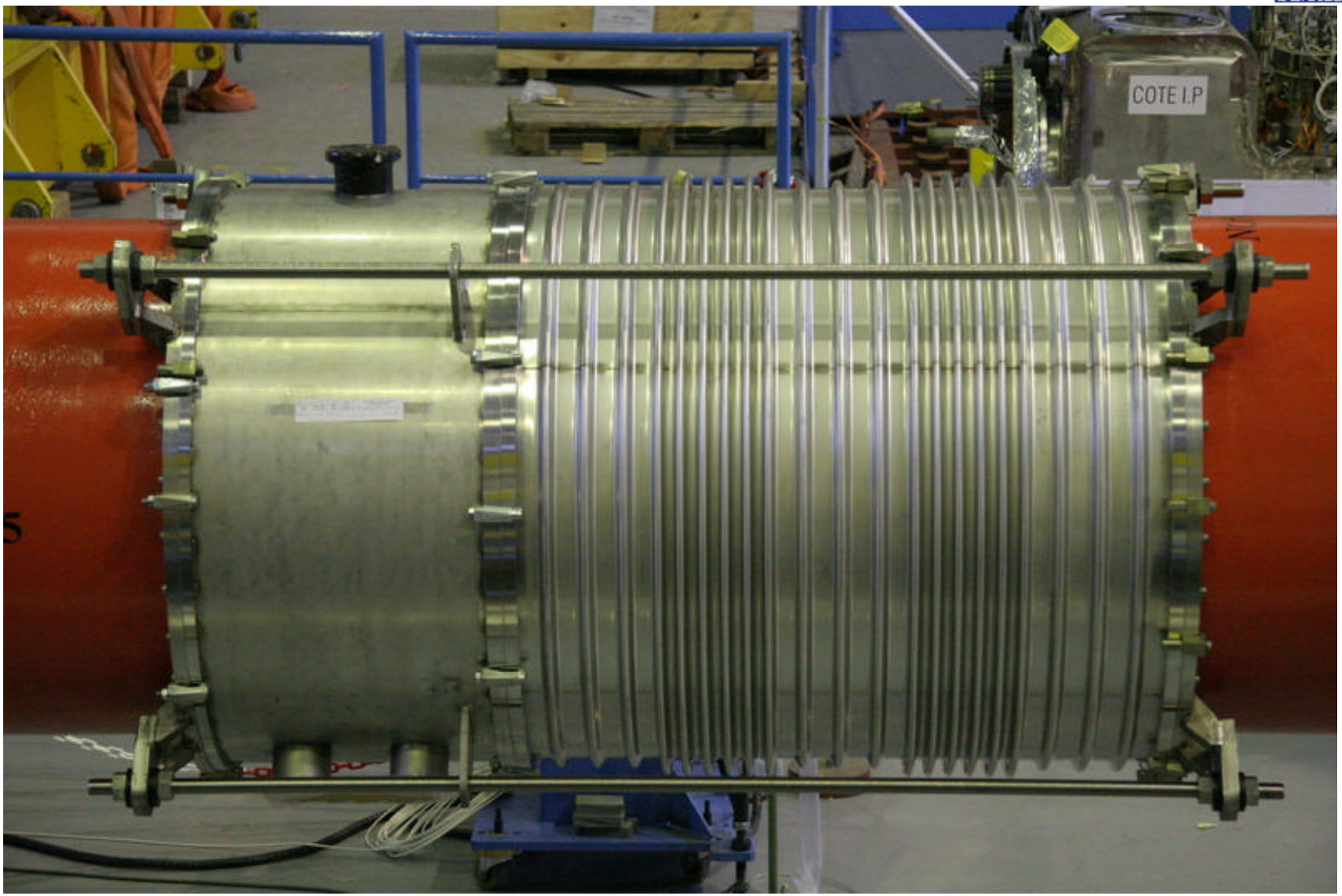
Pipes will be Trimmed and Interconnect Flanges Welded on





Triplet Prepared for Warm Fit-up Test

Vacuum Close-out



DFBX Installation and Commissioning Effort

- LBNL's estimate is based on recent experience with surface fit-up
- All remaining DFBX should go through phase I of surface tests
- This effort should be concluded by December 05
- Estimated remaining effort is 1.5 FTE's (not covered in 05 budget)
- Estimated effort for in tunnel installation and commissioning is 1.5 FTE per DFBX for a total of 12 FTE's (planning for success)

- Total LBNL FTE for HW installation and commissioning is 13.5 FTE's