

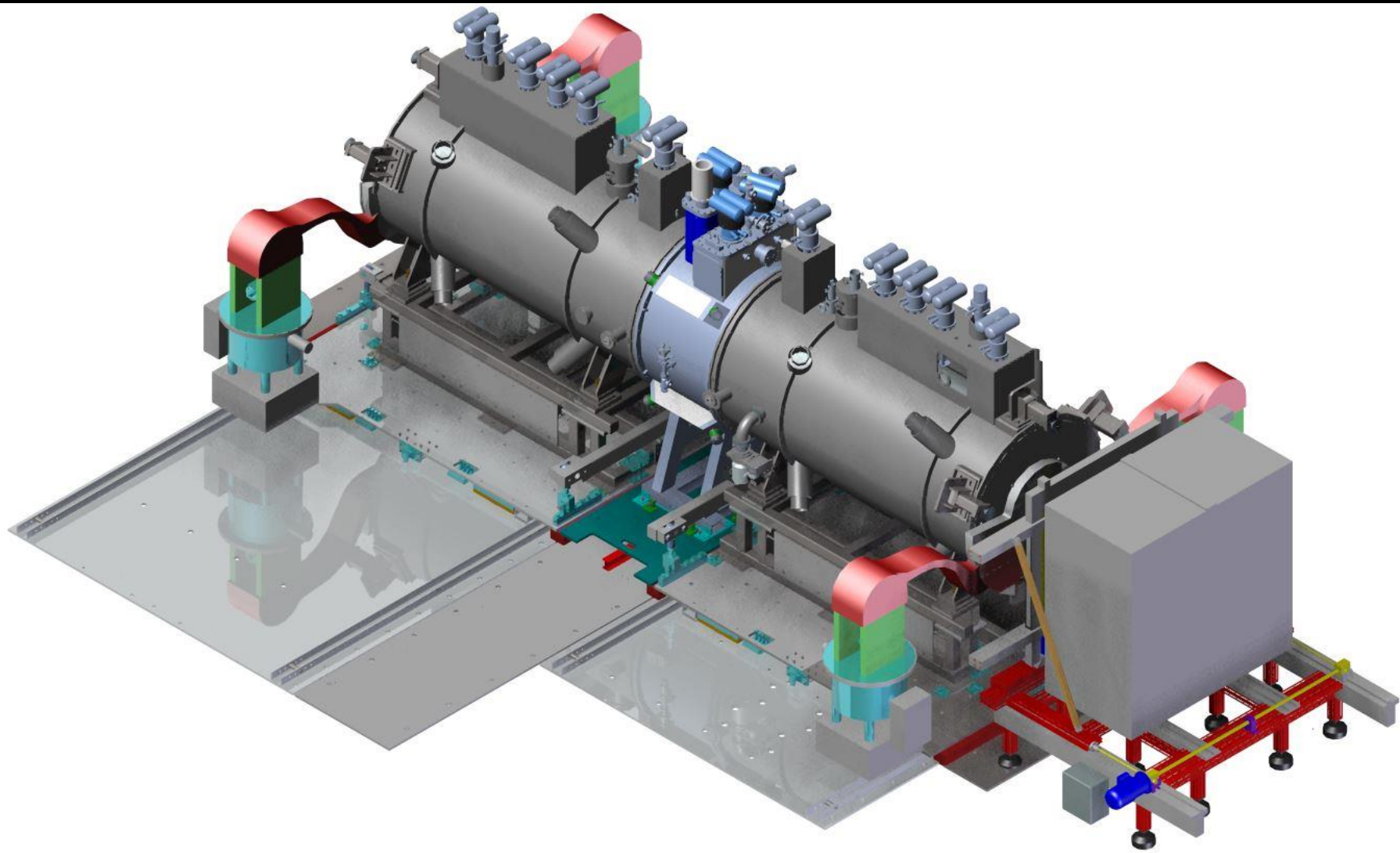
Spokesman's introduction:

Contents:

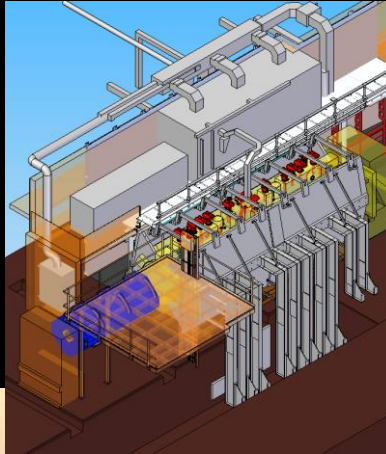
- **Progress snapshot**
- **Operations; preparing for Step IV**
- **Reviews and recommendations**
- **Completing the Step I publications**
- **Outreach**
- **Over to you ...**

Spokesman's introduction

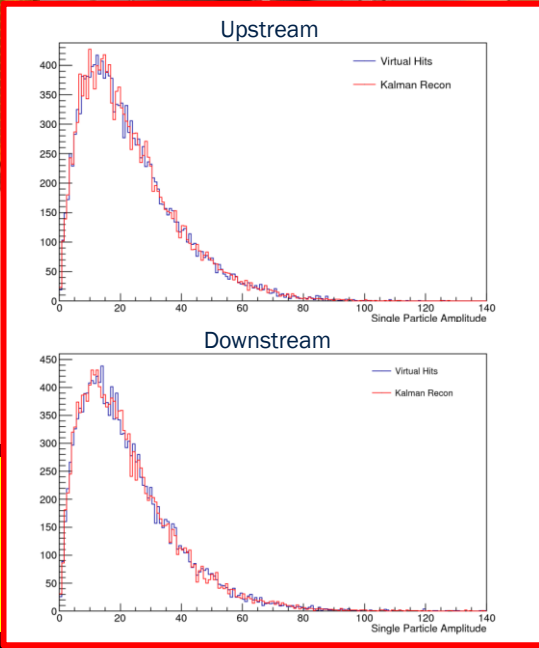
Progress snapshot



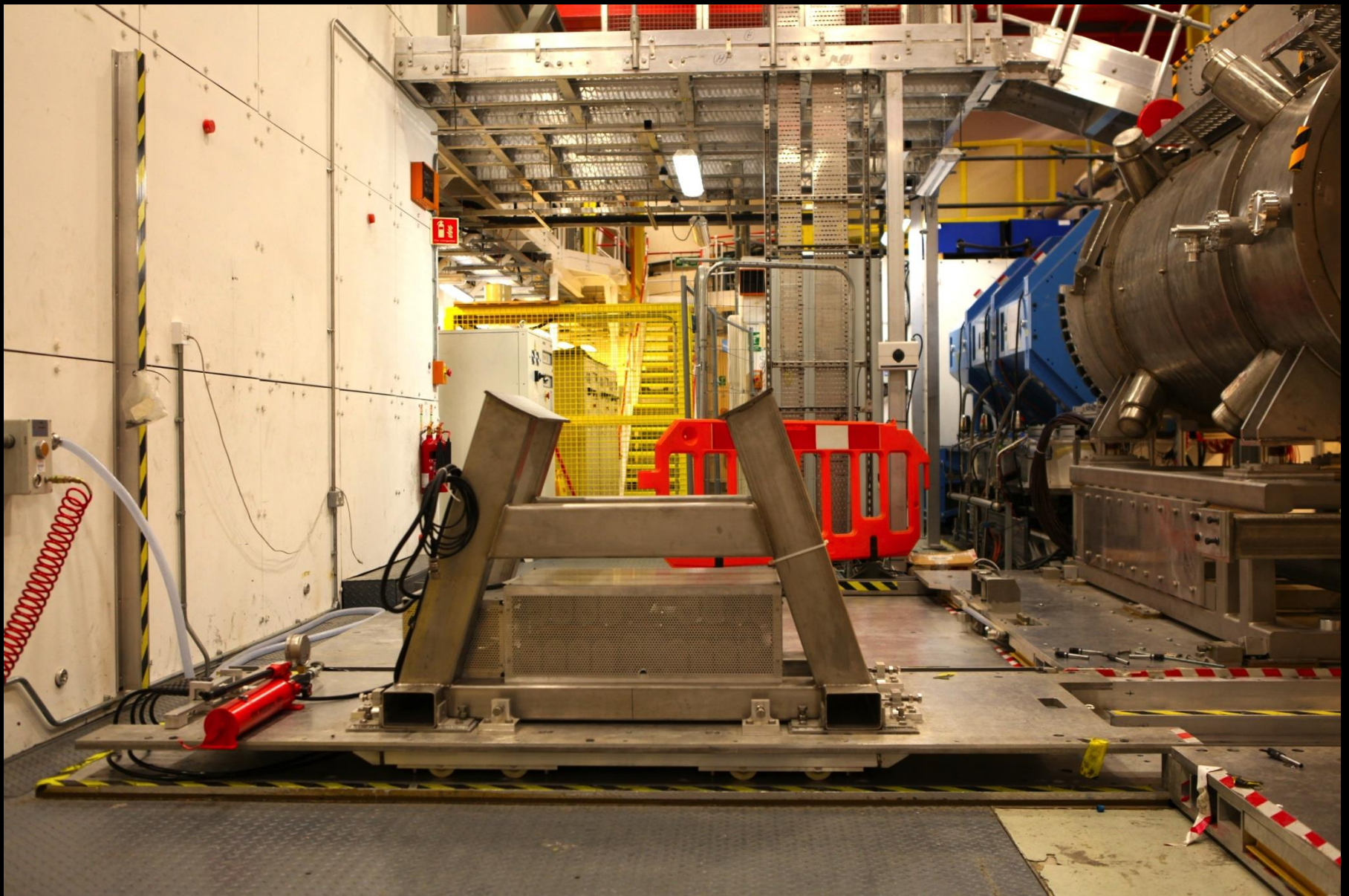
Controls and online:
—
• Converging on Step IV systems



- **Dksol^d:**
 - Quench detector commissioned
 - Power supply installed and commissioned

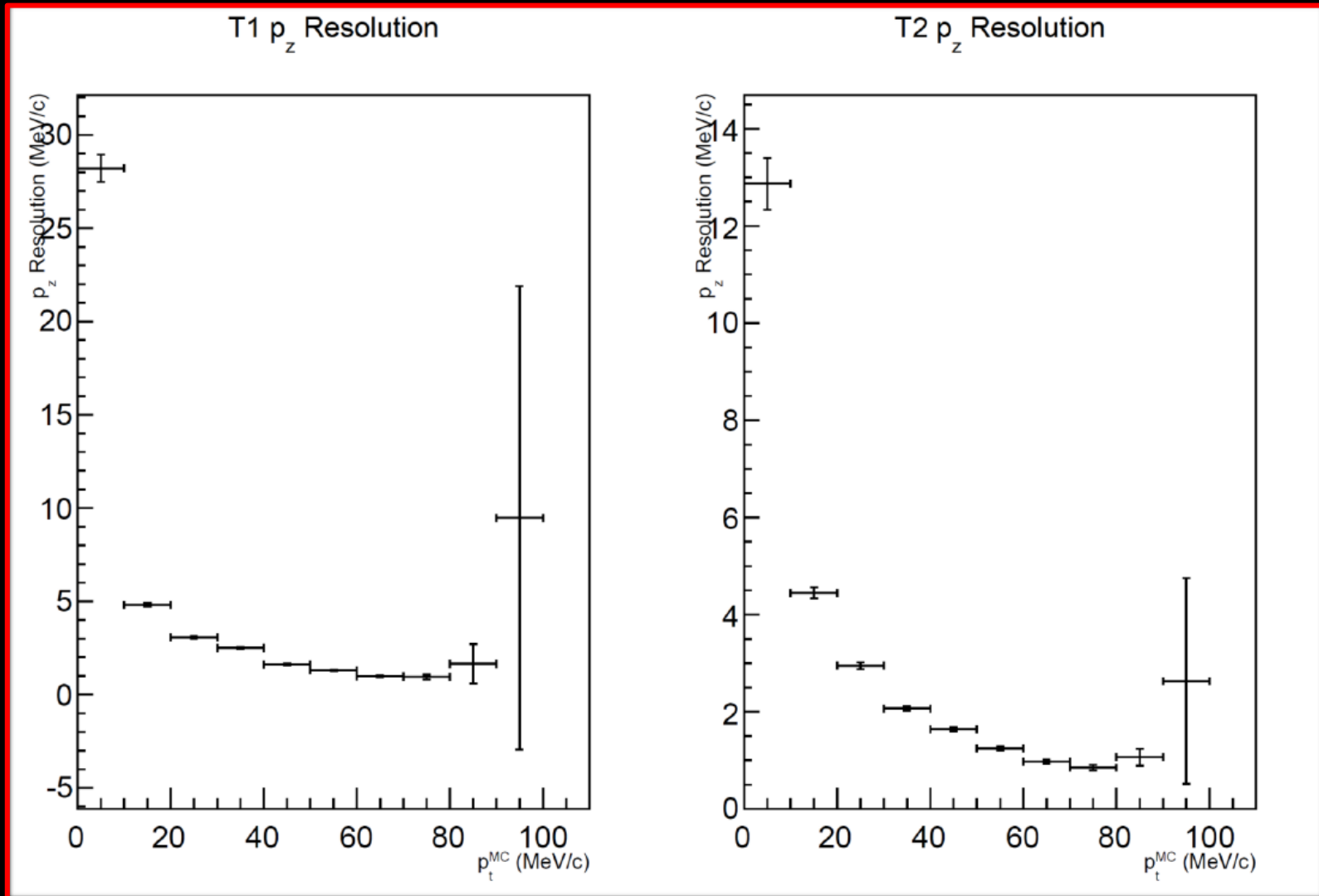


**Excellent progress
First-rate team effort**

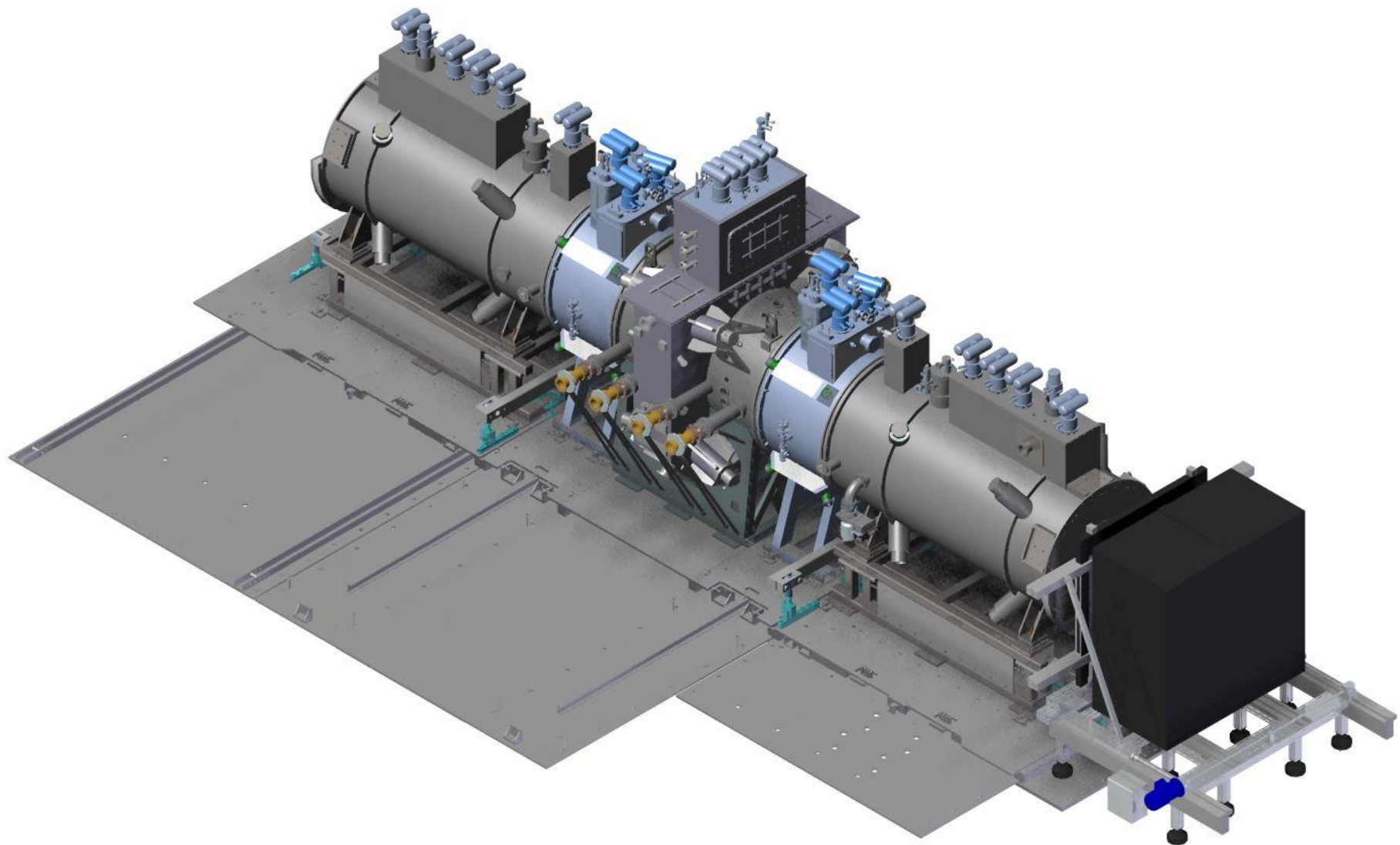


Well positioned; but a lot to do!
Final, detailing to plans this meeting.

Closing on the Step IV physics:



- S/w tools and analysis framework in good shape:
 - Must now exercise it!

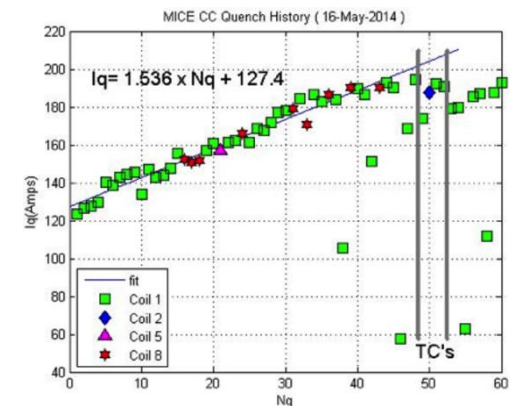
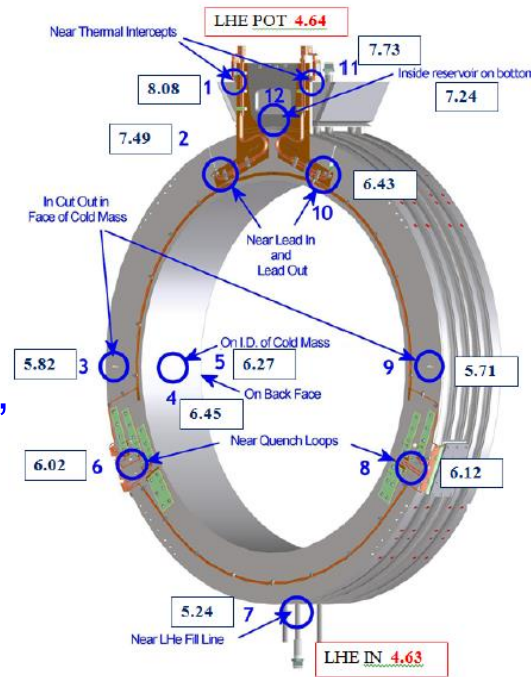


Status overview:

- Focus coil #2:
 - (Re)commissioning started now that FC#1 is installed;
- RFCC module:
 - Coupling coil:
 - Met acceptance criteria; **critical point for this CM ... see later ...**
 - RF cavities:
 - Production well in hand;
 - Remaining issue couplers, in fabrication
- Partial Return Yoke:
 - Substantial civil construction project:
 - Conceptual design complete;
 - Detailed design phase underway; **critical point for this CM ... see later ...**
- RF power:
 - Amplifier has been demonstrated at 2 MW and at 500 kW in MICE Hall
- Second LH2 system:
 - Procurement will start in time for it to be ready for Step V
 - Second LH2 absorber vessel being prepared for shipment to RAL from Osaka

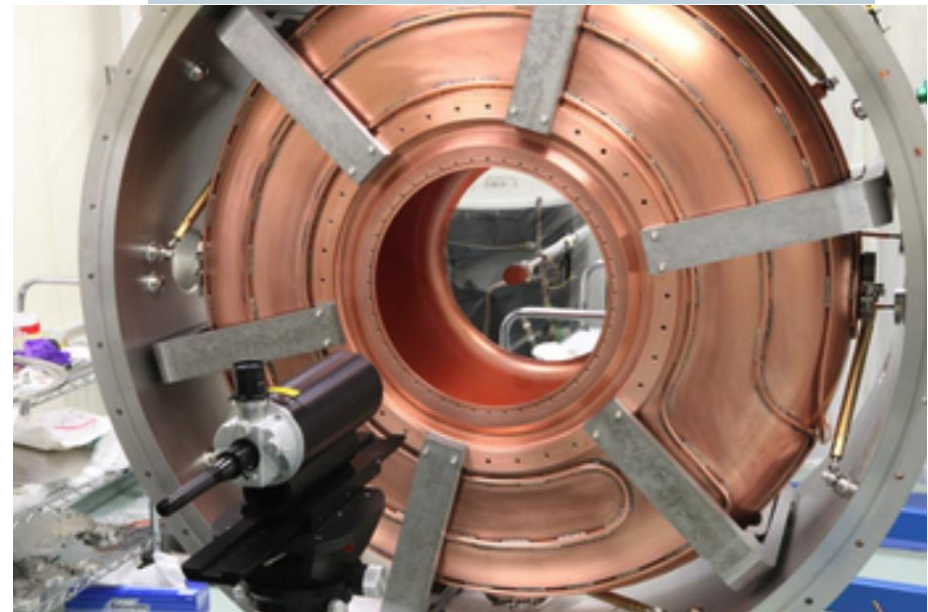
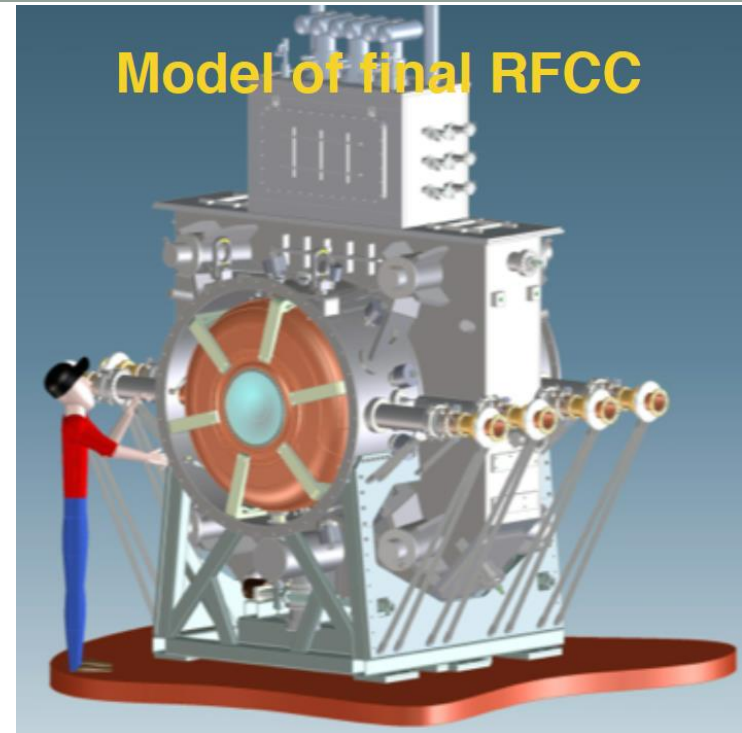
Coupling coil

- Prototype coil trained to acceptance:
 - Does not require “retraining”
 - **Shipdeedoo!**
- Can now proceed with:
 - Fabrication of second coil;
 - Assembly of full coupling-coil module
- Expedited completion of Step V:
 - Schedule being studied using prototype coil as MICE production module



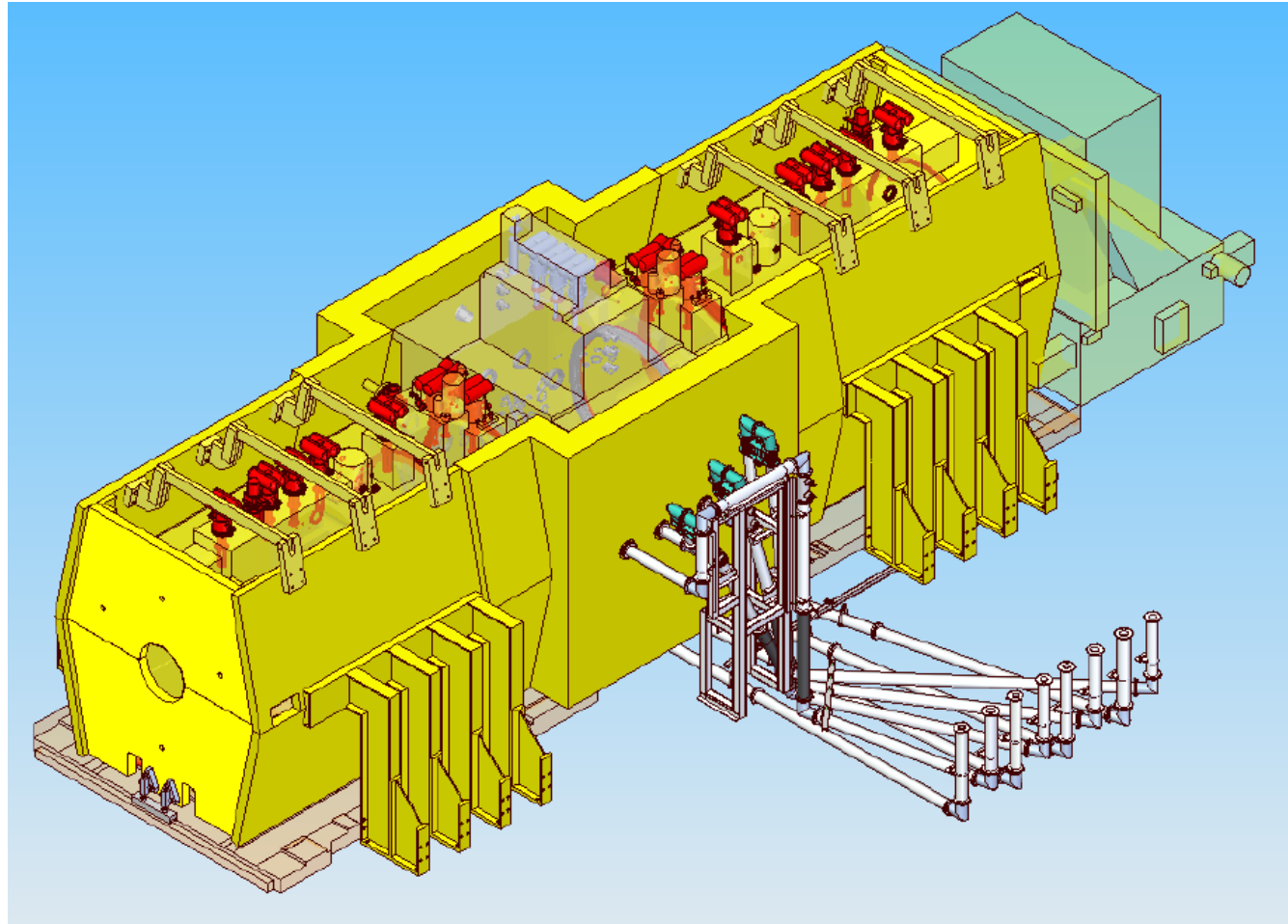
Cavity fabrication

- 10 cavity bodies fabricated
 - Frequency measurement/tune to 201MHz done
 - Final electro-polish to be done at SCTS
- RF tuner arms fabricated:
 - Actuators need to be completed
- Require 8 couplers:
 - 2 prototypes under test in SCTS
- 10 ceramic RF couplers available:
 - 2 in SCTS
- 11 Be windows available
- Single-cavity test stand in MTA:
 - Commissioning underway



Partial Return Yoke

- Magnetic concept developer:
 - First conceptual engineering pass completed
- Options being considered to accommodate waveguides;
- Detailed design work started
- **Discussion to resolve issues critical part of this CM**



Spokesman's introduction

Operations; preparing for Step IV

Preparations for Step IV operations:

- New operations scheme bedding in:
 - Not there yet;
 - Still work to do to “robustify” organisation *and execution*
 - Steve Boyd (Operations Coordinator) will be taking up the slack ...
 - MOM “appointment document” updated to take into account new arrangements
 - MOM is responsible for carrying out the scientific programme:
 - He/she is required to carry out his duties in accordance with the RAL/STFC safety and personnel codes
 - GLIMOS (Andy Nichols) is responsible for safety:
 - He organises this through the Hall Manager
-
- Plan for running will be discussed on Saturday am:
 - Deliver data for high-priority analyses first

Classification of analyses

	Step IV	Step V
Study of properties that determine cooling performance		
Cooling properties of LH ₂ and LiH	Yes	No
Observation of ϵ_{\perp}^n reduction	Yes	Yes
Demonstration of sustainable ionization cooling		
Observation of ϵ_{\perp} reduction with re-acceleration		Yes
Observation of ϵ_{\perp} reduction with ϵ_{\parallel} “management”		Yes
Observation of ϵ_{\perp} reduction with $\epsilon_{\parallel} \oplus \mathcal{L}$ “management”		Yes [†]

[†] Requires systematic study of “flip” optics.

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REVIEWS AND RECOMMENDATIONS

P5 recommendation for MICE:

- **... consult with international partners on the early termination of the MICE muon cooling R&D facility.**

RLSR and MPB outcomes

- MICE Step VI not recommended;
- **MICE Step V endorsed** as it is the only way:
 - For MICE to be, and to be seen to be, a success:
 - Scientifically and technologically;
 - To secure return on UK, US, European and Japanese investment:
 - **UK & US have spent/committed 70% of the cost of Step V:**
[Including essential risk mitigation costs (e.g. CC prototype)];
 - **Europe and Japan have spent 100% of the cost of Step V.**

- RLSR report states:

*Leaving aside the scientific arguments it is salutary to note that on the US-side, 70% of the cost of STEP V has already been expended and in the UK the situation is very similar, translating into a real spend of £28.2M. . . . Therefore, curtailing the project before STEP V has been undertaken would be an enormous and hugely embarrassing case of nugatory spend; let alone reputational damage all around. **Therefore, the clear recommendation from the RLSR Panel on cost and schedule grounds alone is to complete at STEP V . . . based on the fact that most of the R&D risks will have been retired in the next year.***

RLSR and MPB outcomes

- RLSR/MPB recommend that all avenues to expedite the construction of MICE Step V be investigated:
 - Complete construction in calendar 2017 [i.e. integration in MICE Hall];
 - Implies completion of construction of US deliverables for Step V such that integration in the MICE Hall can take place on this timescale;
 - Attractive—reduces the total project cost and “gets MICE done”;
 - Attractive for proponents of muon beams for particle physics:
 - Delivers key technology demonstration;
 - Unlocks progress on development of science programme

DOE review of MAP/MICE

- Review will take place at BNL; 12—14 August 2014
 - [More details in Alan's talk ...](#)

MEMORANDUM FOR: BRUCE STRAUSS
MAP PROGRAM MANAGER
FACILITIES DIVISION
OFFICE OF HIGH ENERGY PHYSICS

FROM: JAMES SIEGRIST
ASSOCIATE DIRECTOR
OFFICE OF HIGH ENERGY PHYSICS

SUBJECT: U.S. Muon Accelerator Program (MAP) Management and
Technical Review

This memorandum is to request that you organize and conduct a Management and Technical review of the U.S. Muon Accelerator Program (MAP). This review is in response to the US Particle Physics Project Prioritization Panel (P5) Report which recommended to:

Reassess the Muon Accelerator Program (MAP). Incorporate into the GARD program the MAP activities that are of general importance to accelerator R&D, and consult with international partners on the early termination of MICE.

In particular, the panel recommends to “*realign activities in accelerator R&D with the P5 strategic plan. Redirect muon collider R&D and consult with international partners on the early termination of the MICE muon cooling R&D facility.*”

This review should be completed before the end of August 2014.

Some personal comments:

- From my discussions:
 - **STFC:**
 - Remain committed to completing MICE such that it is a scientific and technological success;
 - **Now require clear endorsement of programme through the DOE review;**
 - **DOE:**
 - Accept that to achieve scientific and technological success requires completing MICE to Step V;
 - Need to see an expedited schedule;
 - **Essential that our plans are endorsed by the DOE review;**
 - **NSF:**
 - Accept that to achieve scientific and technological success requires completing MICE to Step V;
 - **“Going forward” will entertain proposals for the exploitation of MICE assuming that the programme is endorsed through the DOE review**
- So, there is understanding and support out there ... but ...
 - **We need to make a very good job of the DOE review in August.**

Spokesman's introduction

Completing the Step I publications

Completing the Step I publications:

- **Two papers in preparation:**
 - **Pion contamination in the MICE Muon Beam**
 - **Presentation of principal results this meeting (Orestano);**
 - **Paper draft by CM40, Rome, Oct14**
 - **Performance of the Electron Muon Ranger**
 - **Presentation of principal results (“preliminary”) this meeting (Asfandiyarov);**
 - **Paper draft by CM40, Rome, Oct14**
- **Need to stick to this schedule to “clear the decks”:**
 - **Emphasis for processing and support will then switch to Step IV analysis**

Spokesman's introduction

Outreach

MICE Upstream
Spectrometer
Solenoid

Outreach:

- **Preparing the Step IV “good news story”:**
 - **Initiated at CM38; what’s been done up to now:**
 - **Meeting with CERN, FNAL, STFC PR gurus:**
 - **Guidance, and help (already concrete ...);**
- **Paul Kyberd --- MICE Outreach Coordinator:**
 - **He will present his vision, steps he is taking and how you get involved Friday before the dinner**
- **Your ideas and enthusiasm will be essential!**

Spokesman's introduction

Over to you ...