



Hydrogen System Update

CM32

10th February 2012

S Watson



Science & Technology
Facilities Council



Outline

- i. Introduction
- ii. Safety Review outcome
- iii. Progress since CM31
- iv. Milestones





Introduction

- **Steve Watson**
- Took over from Matt Hills in October 2011
- Current Hydrogen System team is:
 - **Steve Watson** - work package manager
 - **Phil Warburton** - controls, electrical and safety
 - **Mike Courthold** - cryogenics and safety
 - **Vicky Bayliss** - cryogenics
 - **Stef Holland** - mechanical design (3 month placement)
 - **Nigel Sage** - mechanical design (contractor)
 - **Luke Fry** - CAD support





Safety Review outcome

Recommendations

- **Director-level safety responsibility**
 - Prof David Wark, RAL PPD

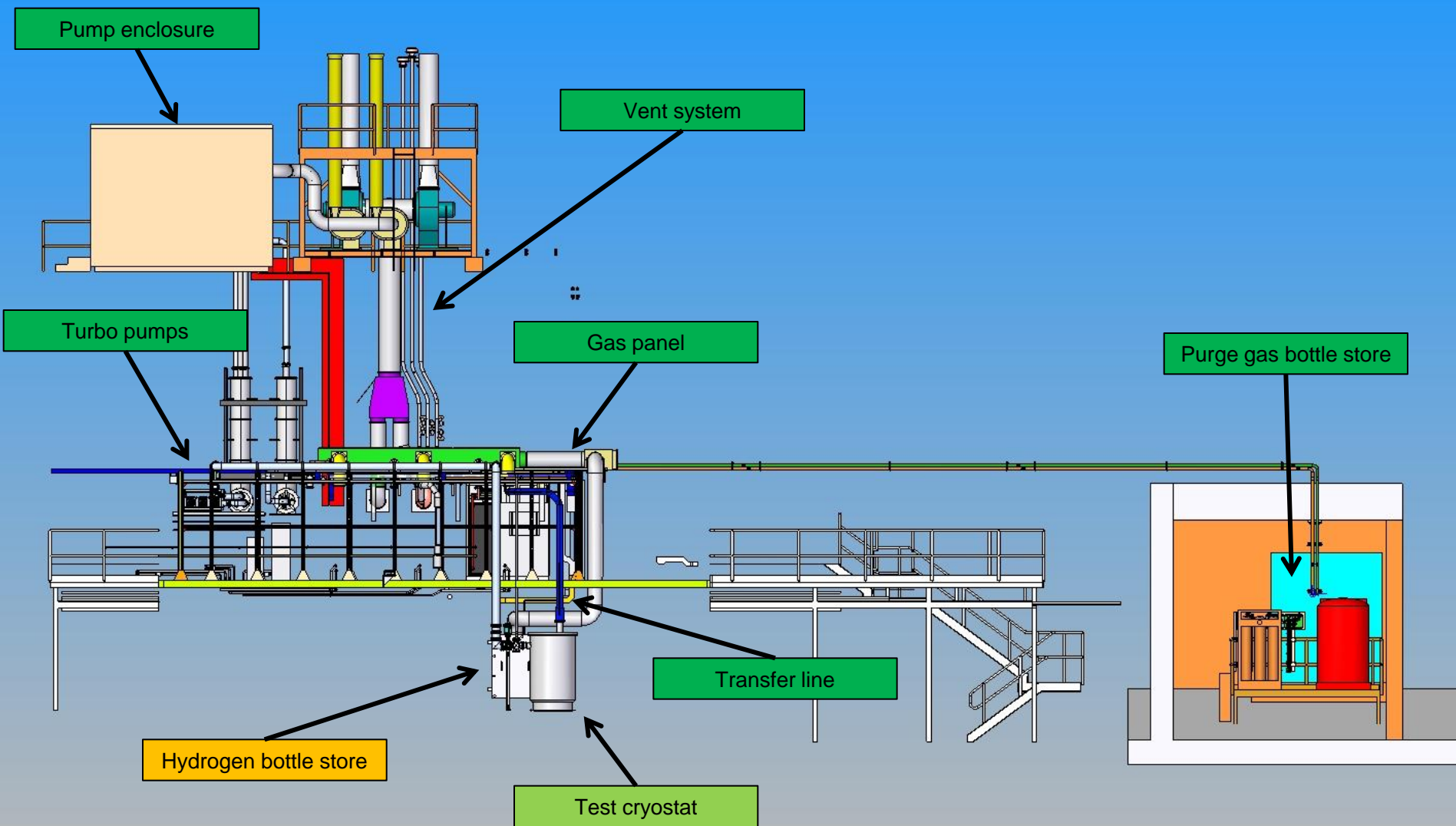
- **Tertiary containment**
 - Argued our original stance that secondary containment plus elimination of ignition sources is acceptable

- **Safety Integrity Level re-assessment**
 - Implementing interlock redundancy to downgrade system to SIL 1

- **Fire strategy**
 - Fire strategy needs review to improve prospects of saving equipment in event of a fire

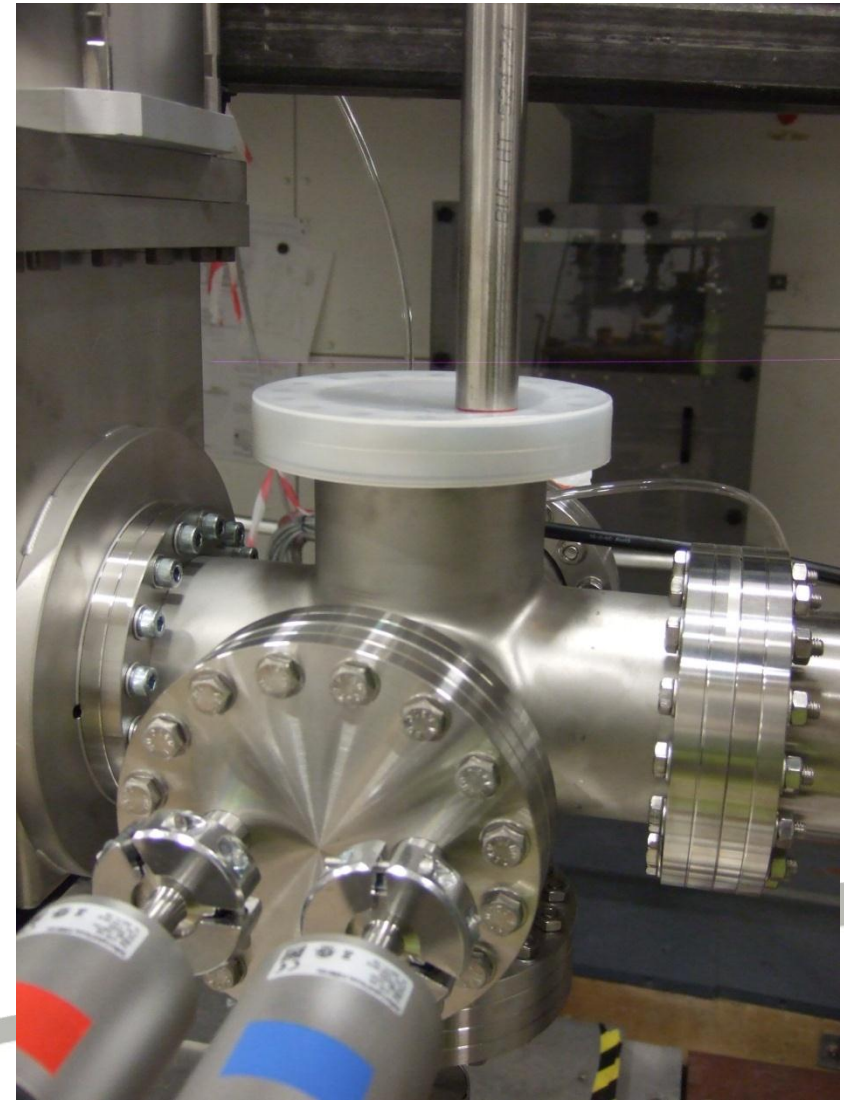
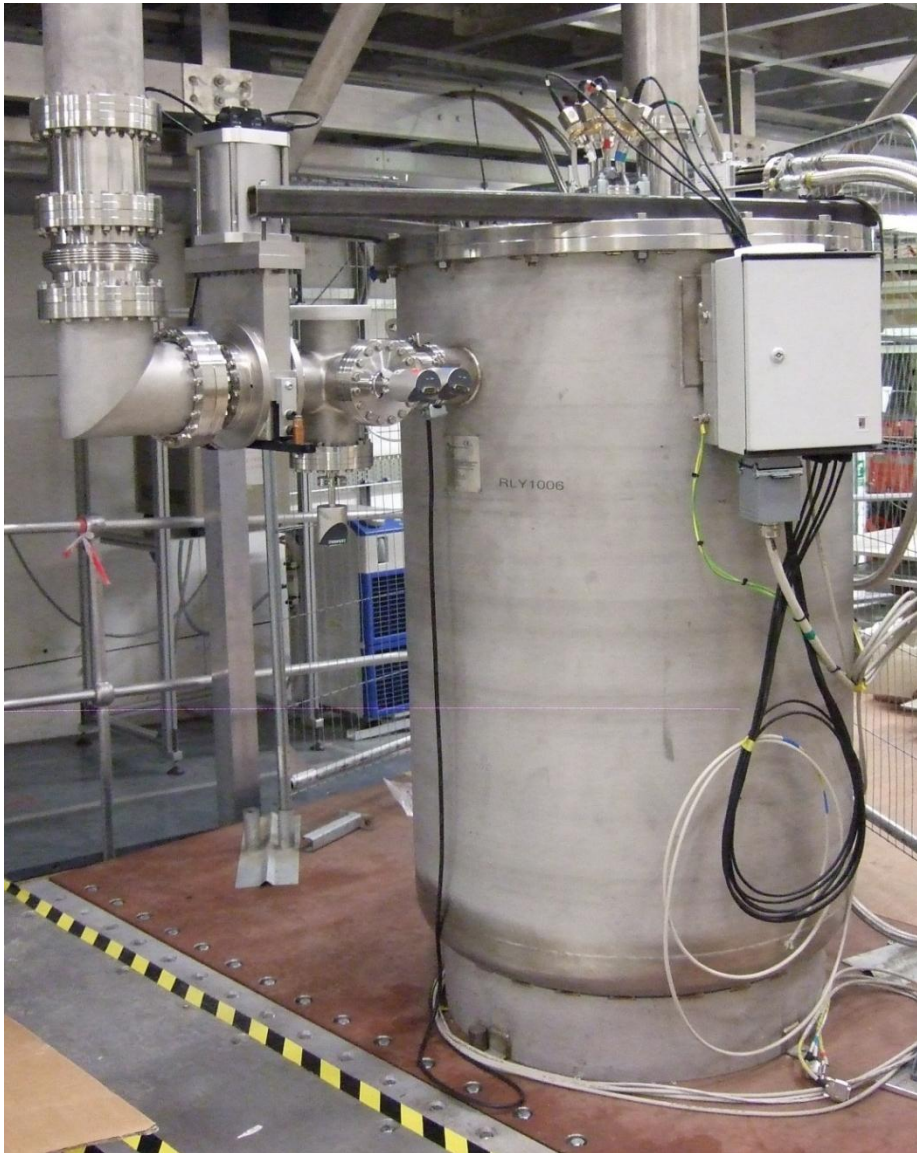


Current progress





Test cryostat



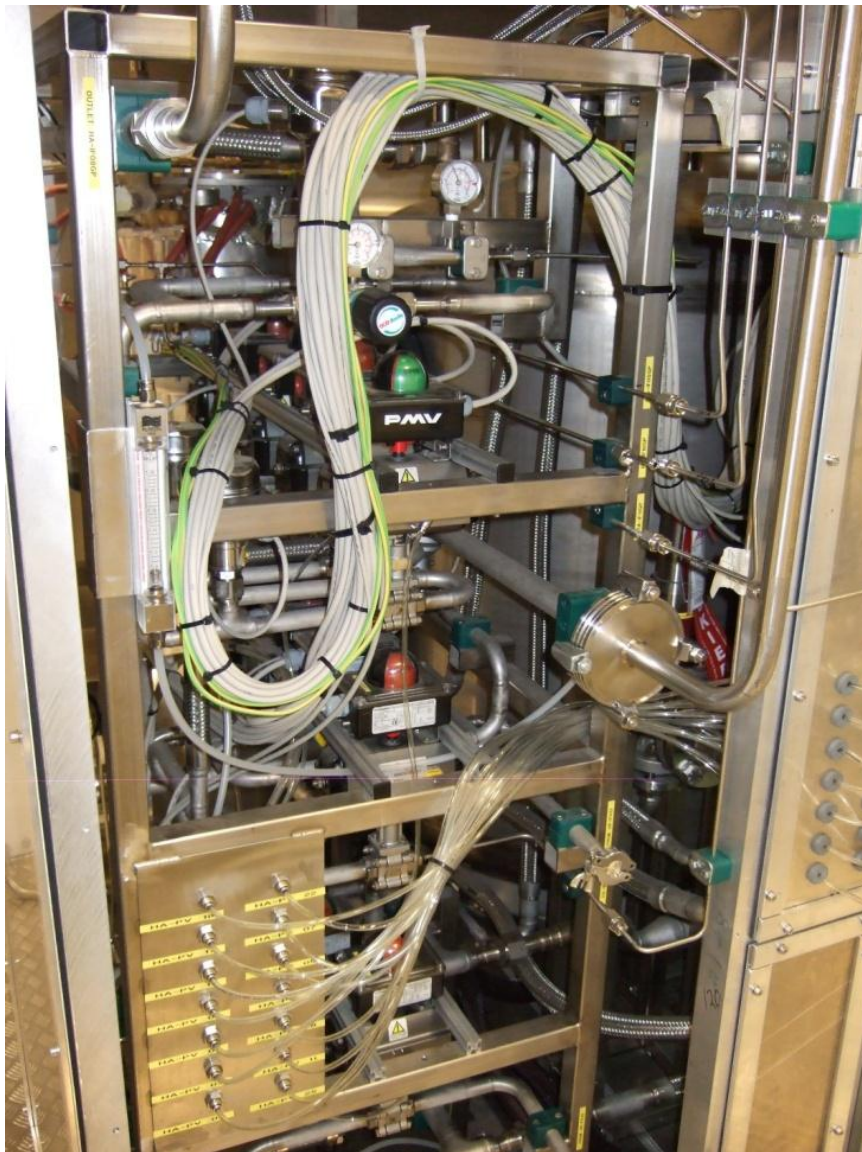


Gas panel



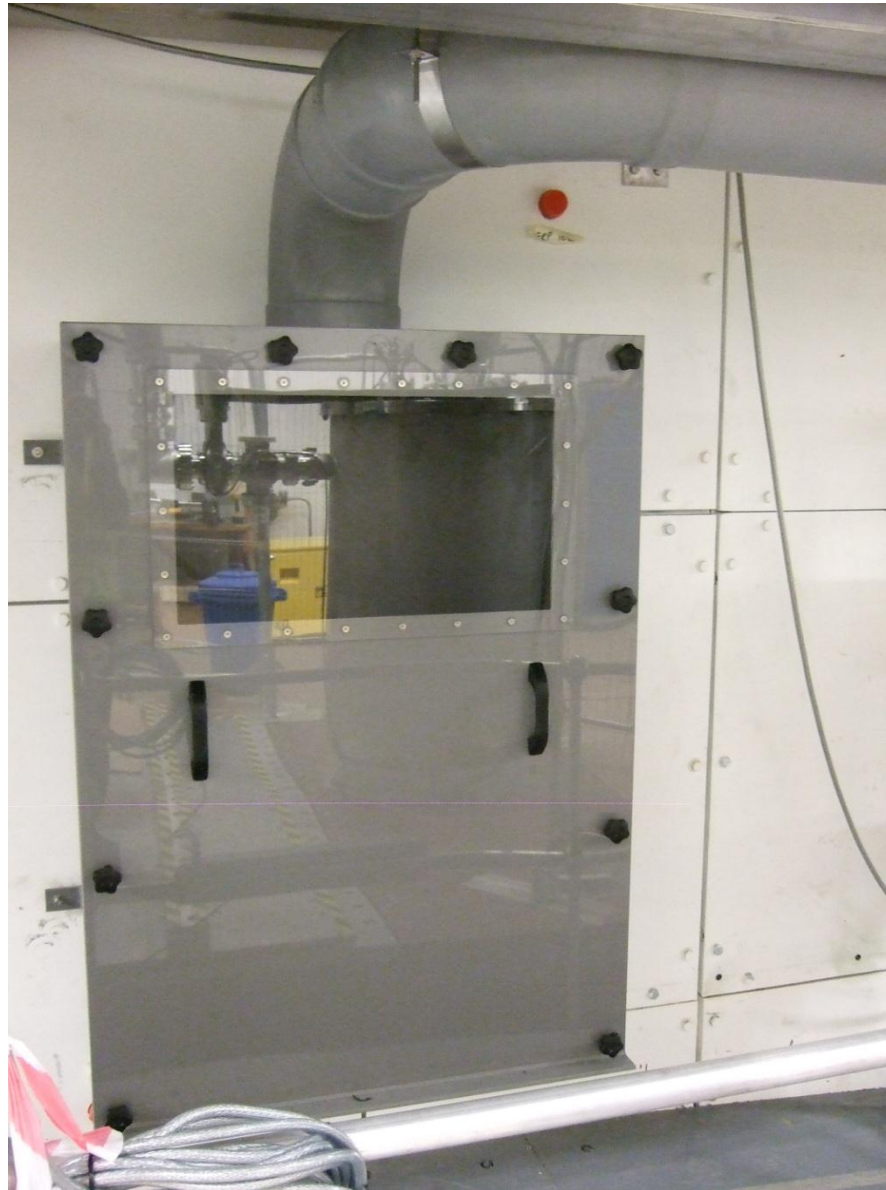


Valve frame and hydride bed





Hydrogen bottle store





Vacuum pipework





Purge gas bottle platform





Next 6 months - schedule

- February 10th
 - Vacuum system testing
 - February 20th
 - Helium verification testing
 - March 5th
 - Review actions completed
 - **Hydrogen testing (4 weeks, hall shut)**
 - **Failure simulations (6 weeks, hall open)**
 - May 15th
 - Hydrogen testing completed
 - June
 - Decommissioning of R&D system
- ↑
 10 weeks
 ↓

