



Science & Technology Facilities Council

ISIS

RIKEN-RAL Refurbishment Project

Beth Evans

Muon Spectroscopy User Meeting

16th July 2018



Purpose

- Many components approaching their 25th birthday, some even older..
- Obsolete components – no parts available
- Enable RIKEN beamline to run for next 25+ years
- Standardise with ISIS





Objectives

- No reduction in specification
- Improvements to operation of facility where possible
- Minimise down-time by using existing shutdowns
- Replacement equipment compatible with existing ISIS systems



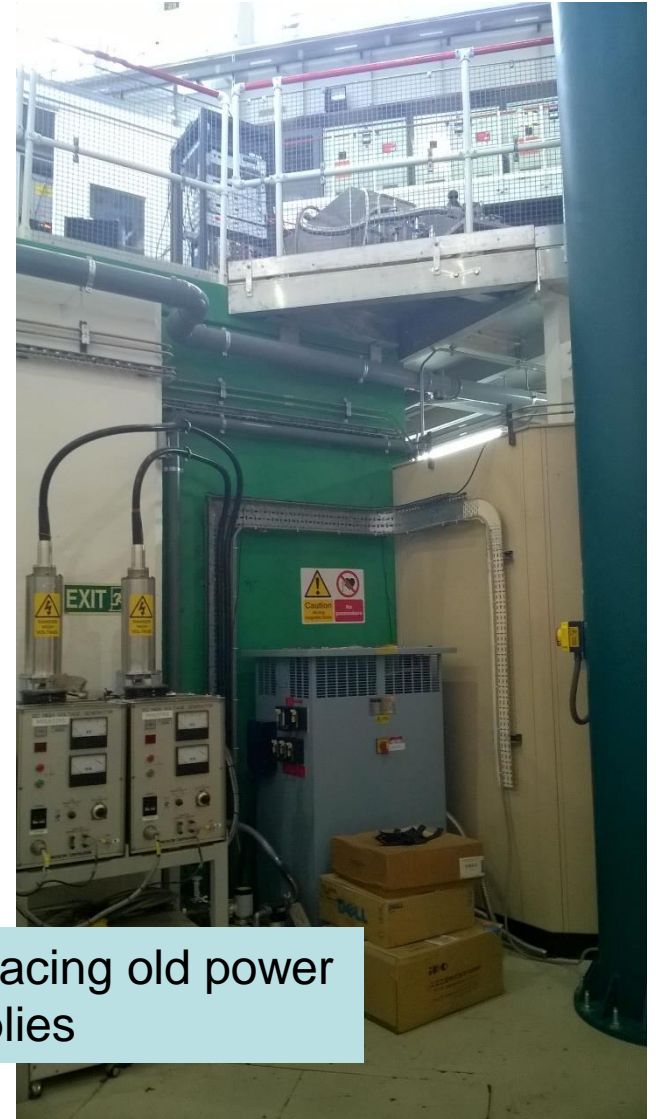


Priorities:

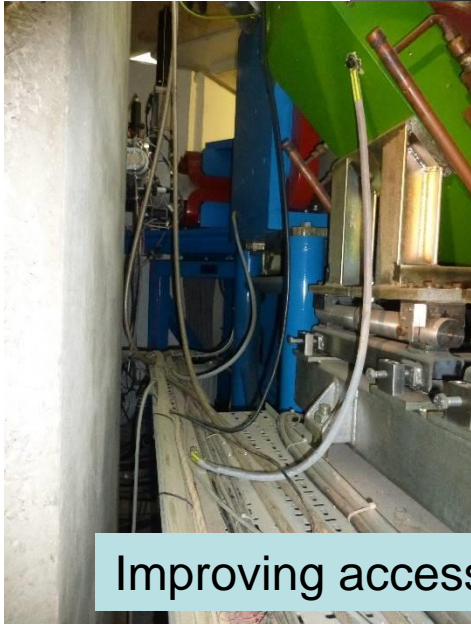
- Water circuits – old, leaking
- Vacuum equipment and pumps – oil-free
- Power supplies – for beamline magnets, septum, separator, solenoid and Argus and Chronus magnets
- Detectors and Sample Environment – ISIS standard
- Cabling
- Power supply controls – PLC upgrade
- Investigation of shielding to improve maintenance access.
- Beamline magnet assessment



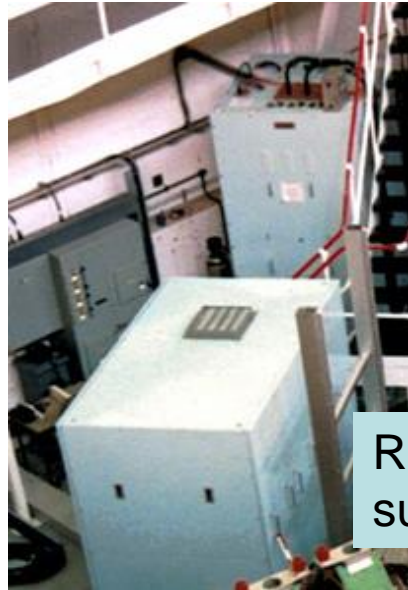
Separator power supplies and HV terminations

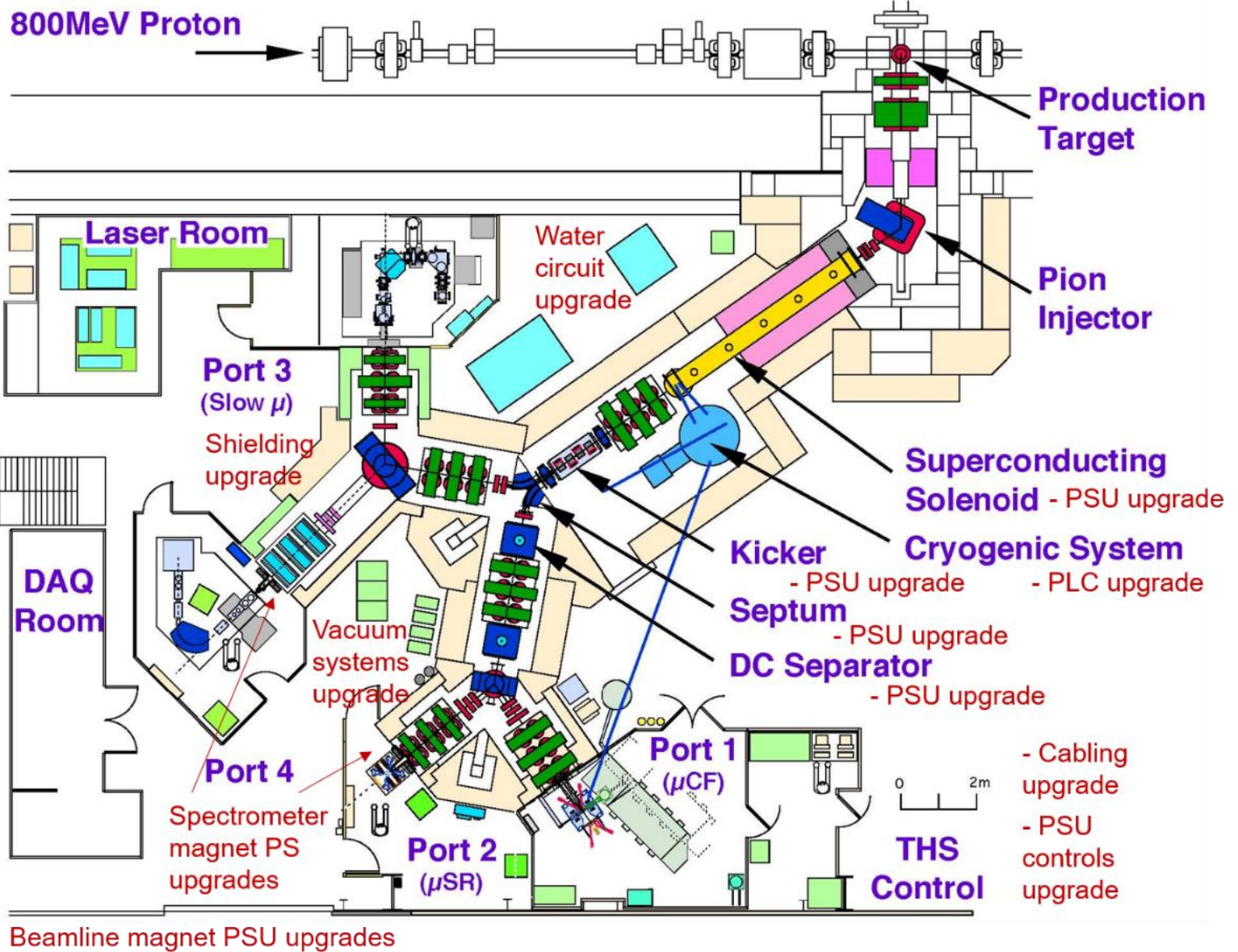


Replacing old power supplies



Improving access







Plan

Project started 1st May

Outline Number	Task Name	2018	2019	2020	2021	2022
1	Infrastructure					
1.1	Project Management	[Grey bar from start to end]				
1.2	Shielding/service removal	[Purple bar]		[Purple bar]		
1.3	Water circuits		[Red bar]	[Light blue bar]	[Purple bar]	
1.4	Vacuum	[Light blue bar]	[Light blue bar]	[Light blue bar]	[Light blue bar]	[Light blue bar]
1.5	Shielding improvement	[Red bar]	[Light blue bar]		[Purple bar]	
1.6	Cabling	[Light blue bar]		[Purple bar]	[Light blue bar]	
1.7	Beamline magnet assessment			[Purple bar]	[Purple bar]	
1.8	Networking	[Purple bar]				
1.9	Drawings and documentation	[Purple bar]	[Purple bar]			[Purple bar]
1.10	Safety			[Purple bar]		
2	Power supplies and control					
2.1	Beamline magnets PS	[Red bar]	[Light blue bar]	[Light blue bar]	[Purple bar]	[Light blue bar]
2.2	Argus and Chronus magnets PS			[Red bar]	[Light blue bar]	[Purple bar]
2.3	Septum PS		[Red bar]	[Light blue bar]	[Light blue bar]	[Purple bar]
2.4	Separator PS		[Red bar]	[Light blue bar]	[Light blue bar]	[Purple bar]
2.5	Kicker PS	[Red bar]	[Light blue bar]	[Light blue bar]	[Light blue bar]	[Purple bar]
2.6	Power supply controls	[Red bar]	[Light blue bar]	[Light blue bar]	[Purple bar]	[Light blue bar]
2.7	Solenoid PS	[Red bar]	[Light blue bar]	[Light blue bar]	[Light blue bar]	[Purple bar]
3	Compressor: PLC upgrade	[Red bar]	[Light blue bar]	[Light blue bar]	[Purple bar]	[Light blue bar]
4	Detectors	[Red bar]	[Light blue bar]		[Purple bar]	[Light blue bar]
5	Sample Environment				[Light blue bar]	[Light blue bar]

[Red]	Specification/design
[Light blue]	Tender/Procurement/Outside Manu.
[Orange]	ISIS Manufacture
[Purple]	Installation / Work carried out
[Blue]	Commissioning



Progress:

- Equipment purchased
- Specifications and tenders prepared
- Drawings upgraded:

