

# Step IV



## Step IV extended through 2016

- QP/QD – in progress at FNAL delivery mid April
  - Requires new contactors and new resistors –contactors are delivered – resistors expected on acceptable timescale.
  - Engineering required to fit within available space – ongoing
  - Installation locations – require clearance from ISIS.
  - S.Griffiths full installation plan. Commissioning from early May.
  - Installation requires Mon noon to Friday noon access else further delay incurred.
  - Running still possible overnight or Friday to Monday
- DS power supply repair
  - FuG power supply returned to RAL and commissioned this week – soak test at 870A now in progress, hours remaining



# Solenoid Alignment -Bellows

Requires axial-offset bellows.

2 parallel solutions.

1. Engineered offset-bellows

- requires full bidding process.
- 6 week delivery - clock starts after bidding complete
- Access issues being considered.

2. Align-measure-correct-install,

- Send bellows for modification - improve bolt circle placement
- Fabricate template of SS bolt hole positions
- Align solenoids.
- Mark bolt hole positions
- Remove and drill bolt holes using template
- option in hand A Nichols.



# H2 system

- 2 leaks
  - H2 insulating vacuum to environment.
  - H2 system to insulating vacuum.
- Plan to repair developed,
  - Machining– May require further work, crack being investigated by x-ray analysis currently.
  - Improve/decrease heat load – thermal performance, interesting results to be resolved.
  - New heater to force convection.
- H2 compressors moved to R9.
- Need vacuum end caps for FCU testing
  - domed end cap in progress.
  - Alternative US qualified design.
  - A Nichols to pursue dished end cap option through PED5500.
  - 2 month process. Drawings well advanced.



# Demonstration of Ionisation Cooling



Spectrometer Solenoid remains critical path

- preparation of the technical engineering drawings
  - **mid-March.** Some work now completed
- release the drawings for tender to companies for full quotes
  - **end March**
- Quotes returned and available for evaluation by the collaboration
  - **mid-May**
- Make or buy decision – **mid-June.**

**Project has been re-planned based on these dates**

- 3 scenarios planned

• Full plan – 2 <sup>nd</sup> yr +17%	End:	March 2020
• Flat cash +10%		August 2020
• Flat cash		Oct 2020
- Cavity delivery.
  - Cavity couplers test at FNAL now.
  - Cavity assembly Feb/March in Berkeley.
  - Cavities to RAL July 14<sup>th</sup>/August 11<sup>th</sup> 2016?
  - RF delivered to RAL summer 16.
  - 2016 running will change RF power availability date.
  - Developing plan for offline test and clean room provision.

