Science & Technology Facilities Council

Tungsten Powder Jet Update

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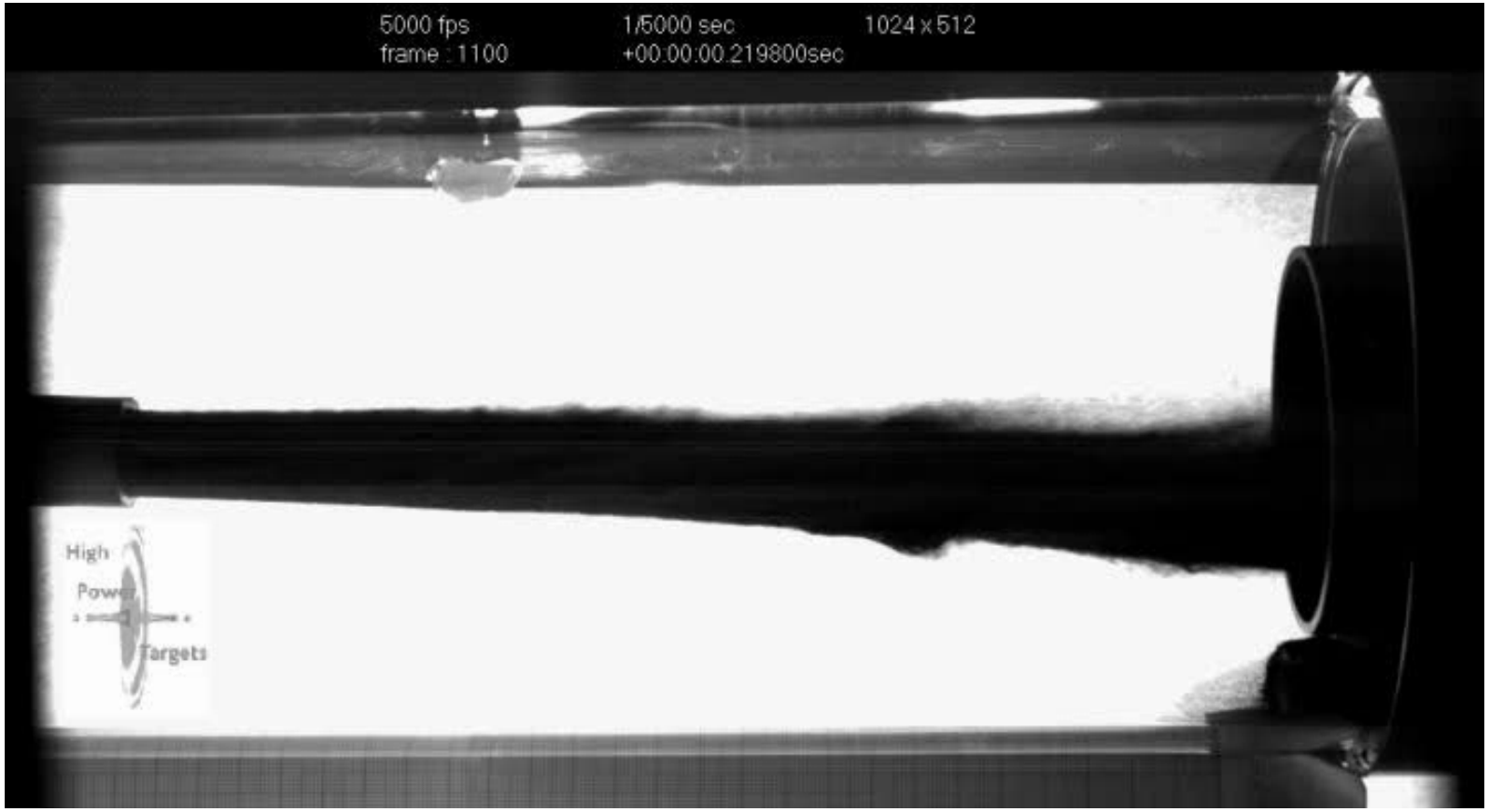
STFC Rutherford Appleton Laboratory, UK

2nd Princeton-Oxford High Power Target Meeting
6-7 November-2008

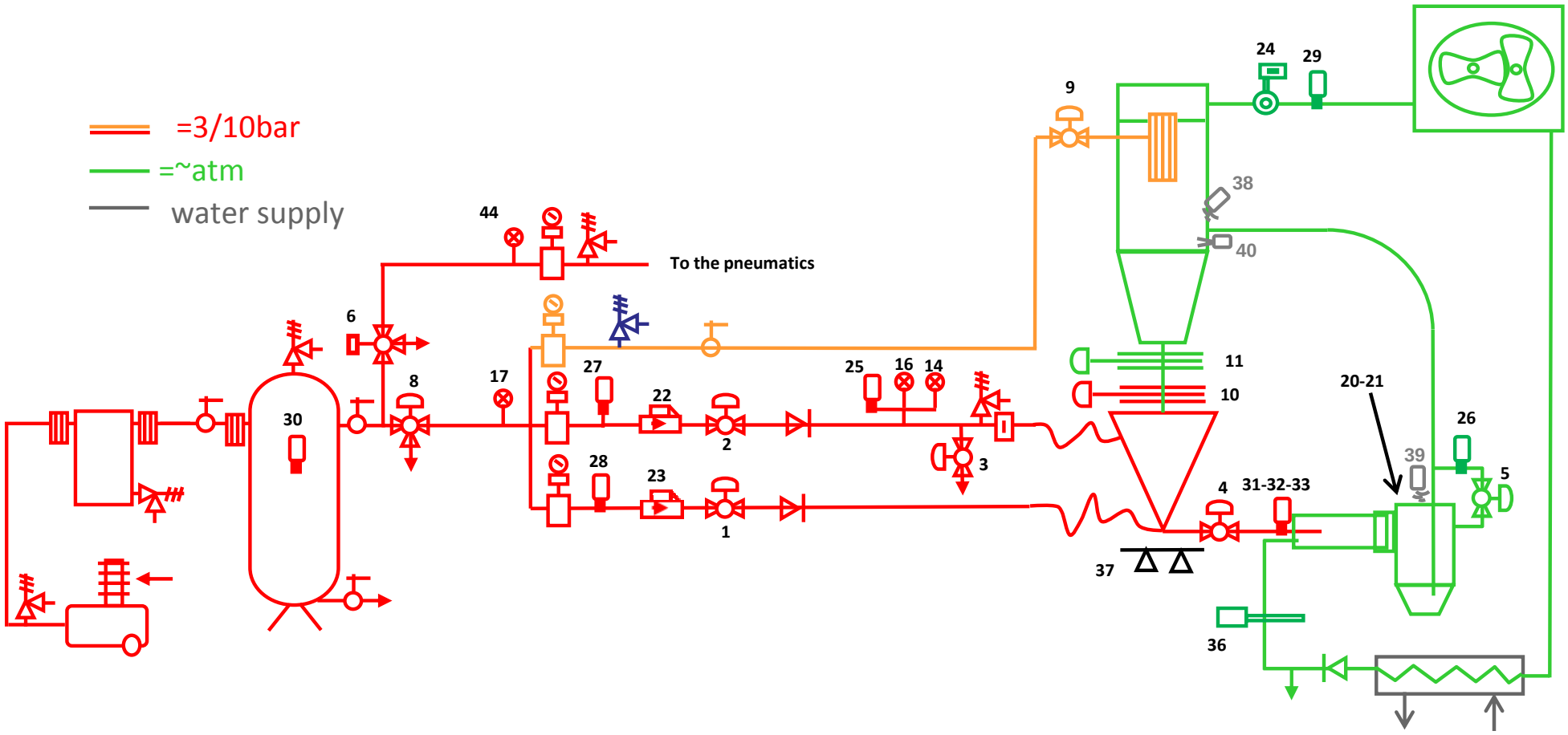
Tungsten Powder Jet

propelled by air ~3 bar



Thank you to EIP at RAL for providing the video equipment used for these experiments

Rig Flow Diagram



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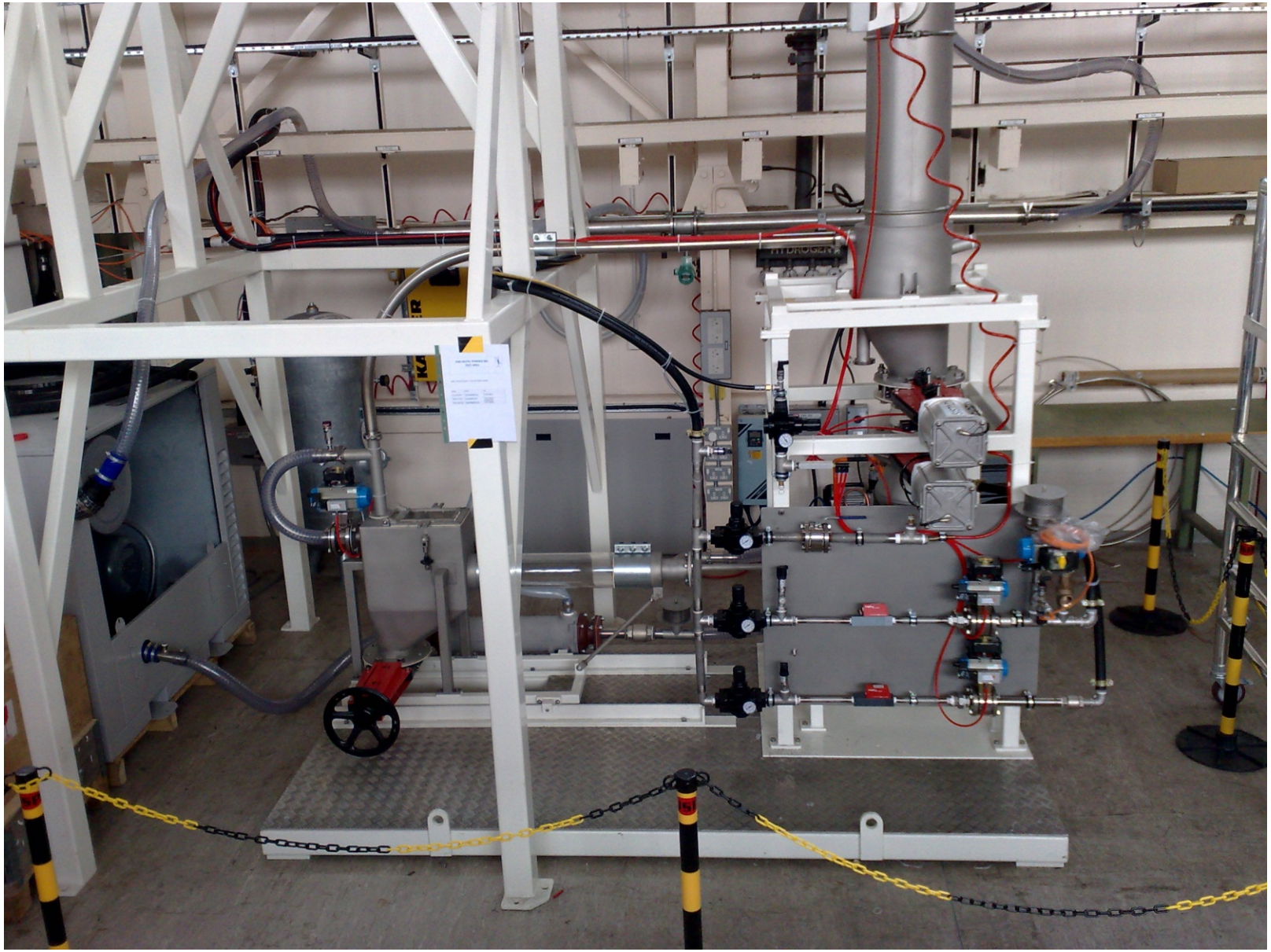
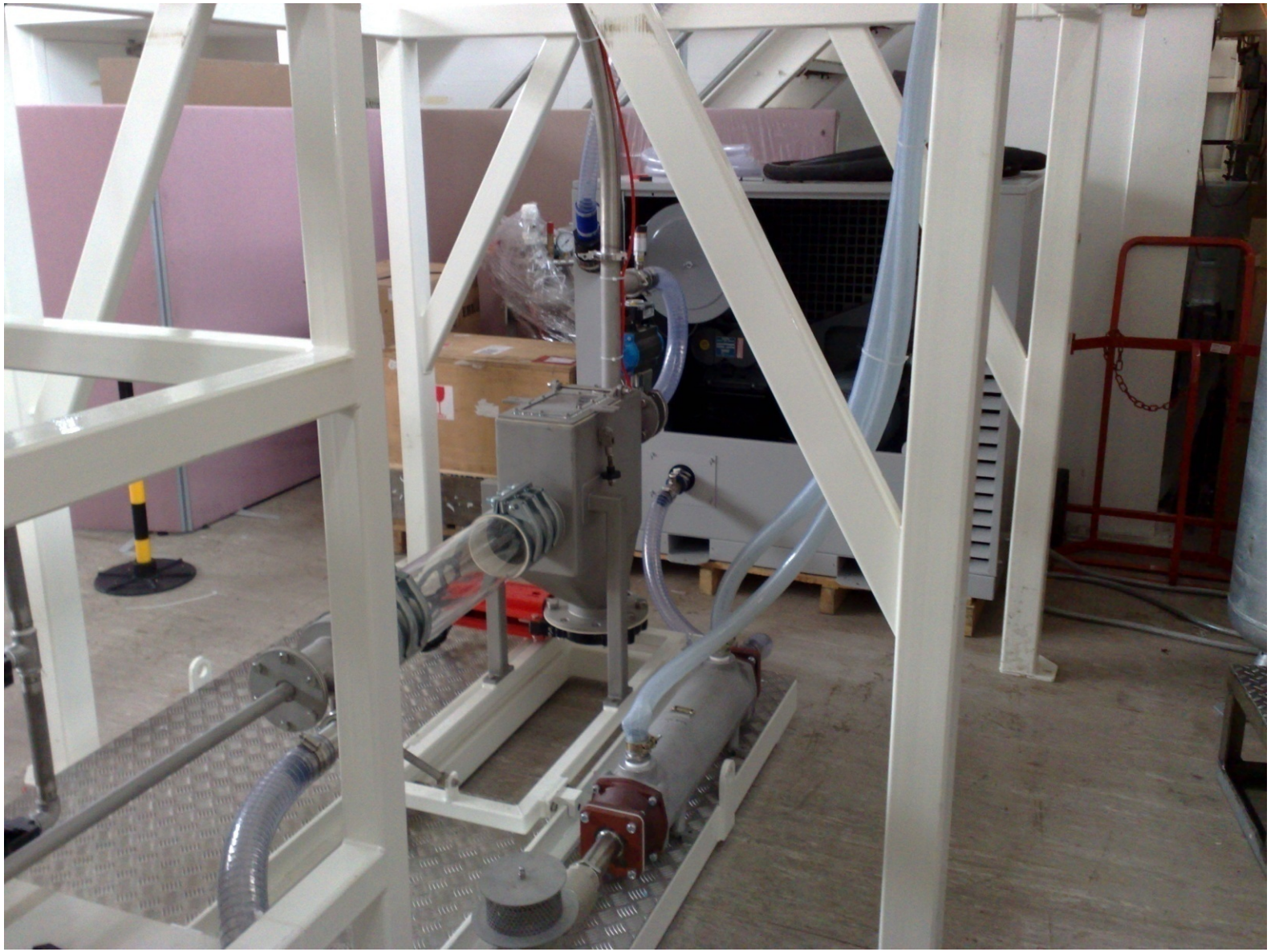
Powder Jet Rig 31st Oct 2008



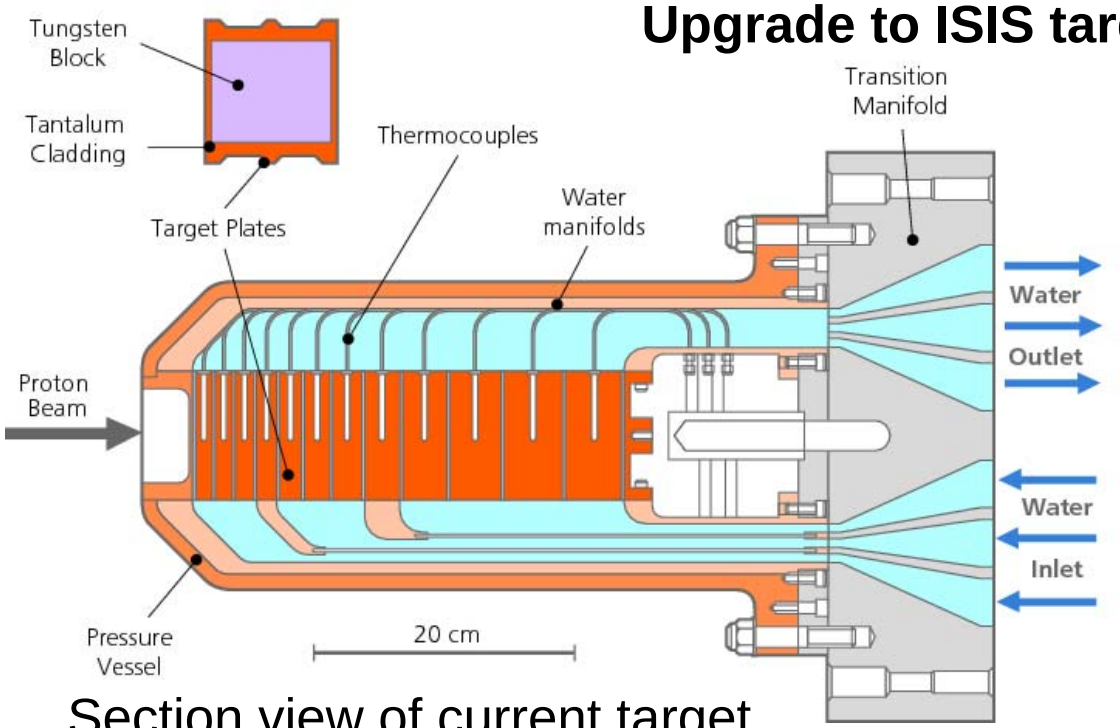
Powder Jet Rig 31st oct 2008



Schedule

November 10-18	system and control wiring
November 19-27	system control development
November 27-28	system commissioning
November 27-christmas	preliminary experiments

Upgrade to ISIS target station 1



Section view of current target

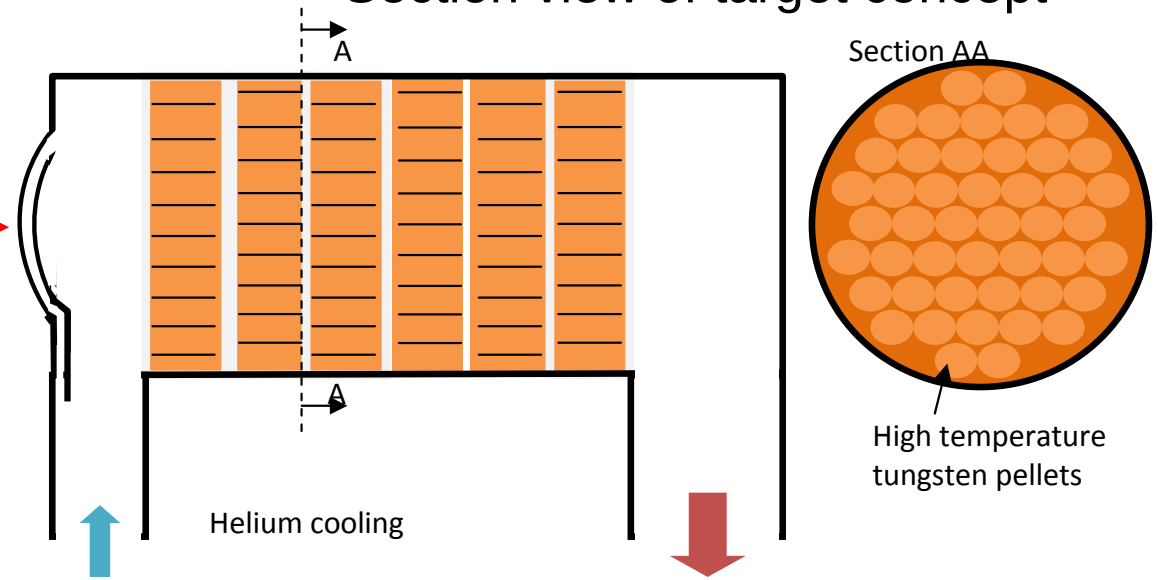
800MeV, 160kW, 50Hz
90kW heat removed in water

Target being in pellet form allows high temp operation without high stresses

No cooling water to moderate neutron flux

Scope for more than 160kW?
Ref: Sievers 2003.

Section view of target concept



NF-IDS and EUROnu Targets Work Program (30 months)

NF-IDS primarily focused on baseline recirculating mercury target

With input of EUROnu task broadened to include alternative tecnologies (solid & flowing powder targets)

Must achieve **cost estimate** of target system so implies target selection

•Selection criteria for choice of target
•Work Program

First meeting 15th to 17th December 08 at CERN

Comments on proposed selection criteria and work program are welcomed.