The High-power Target Experiment at CERN

Friday Phone Meeting

April 8, 2005

Harold G. Kirk
Brookhaven National Laboratory

Proposal to Isolde and nToF Committee

CERN-INTC-2003-033
INTC-I-049
26 April 2004

A Proposal to
the ISOLDE and Neutron Time-of-Flight Experiments
Committee

Studies of a Target System for a 4-MW, 24-GeV Proton Beam

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Spokespersons: H.G. Kirk, K.T. McDonald
Local Contact: H. Haseroth

Participating Institutions

1) RAL
2) CERN
3) KEK
4) BNL
5) ORNL
6) Princeton University

Proposal submitted April 26, 2004

BROOKHAVEN NATIONAL LABORATORY

Approval—March 3, 2005

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

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Your reference:
Our reference: CSO-2005-037/O

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Professor K.T. McDonald
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Geneva, 4th April 2005

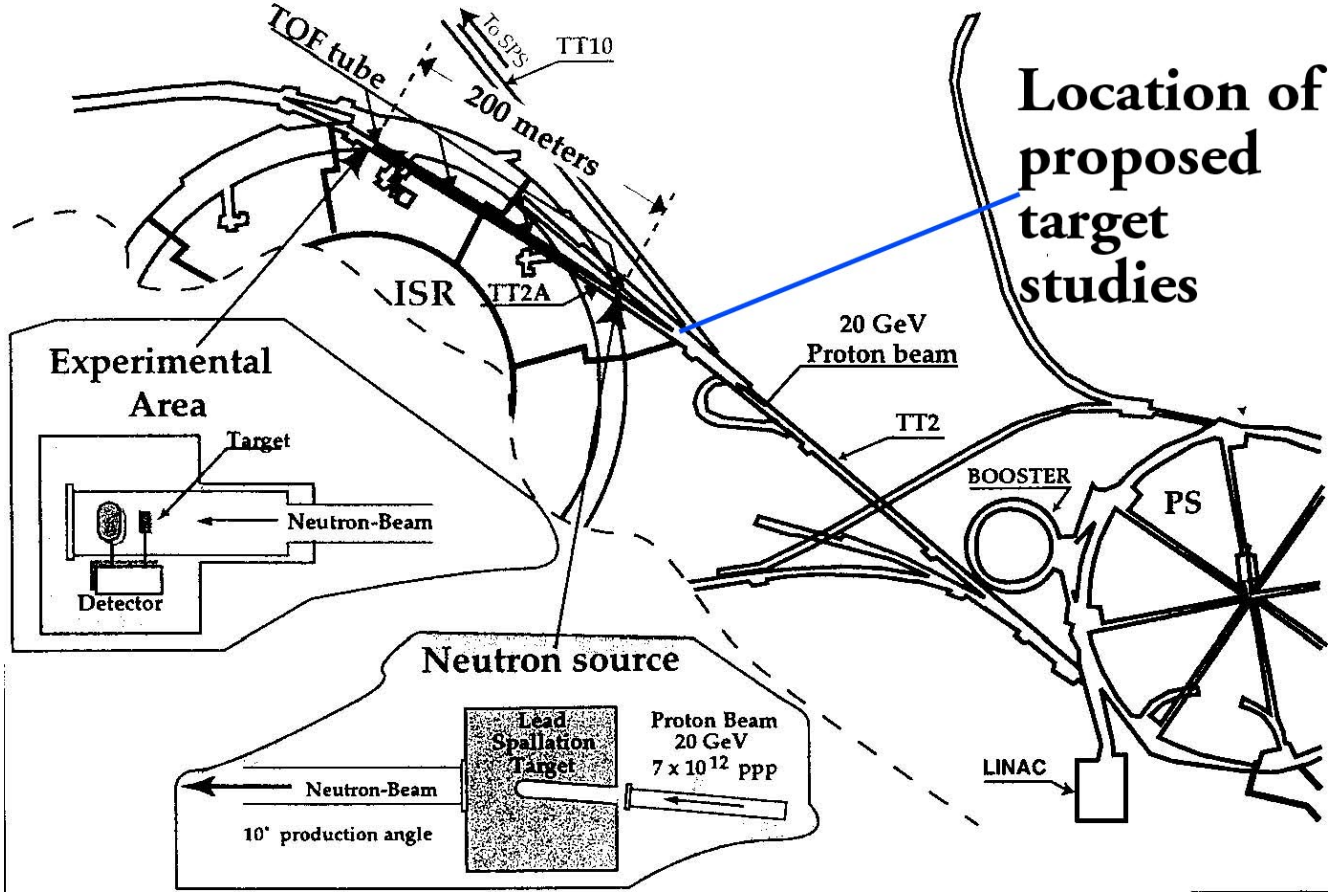
Dear Professor Kirk and Professor McDonald,

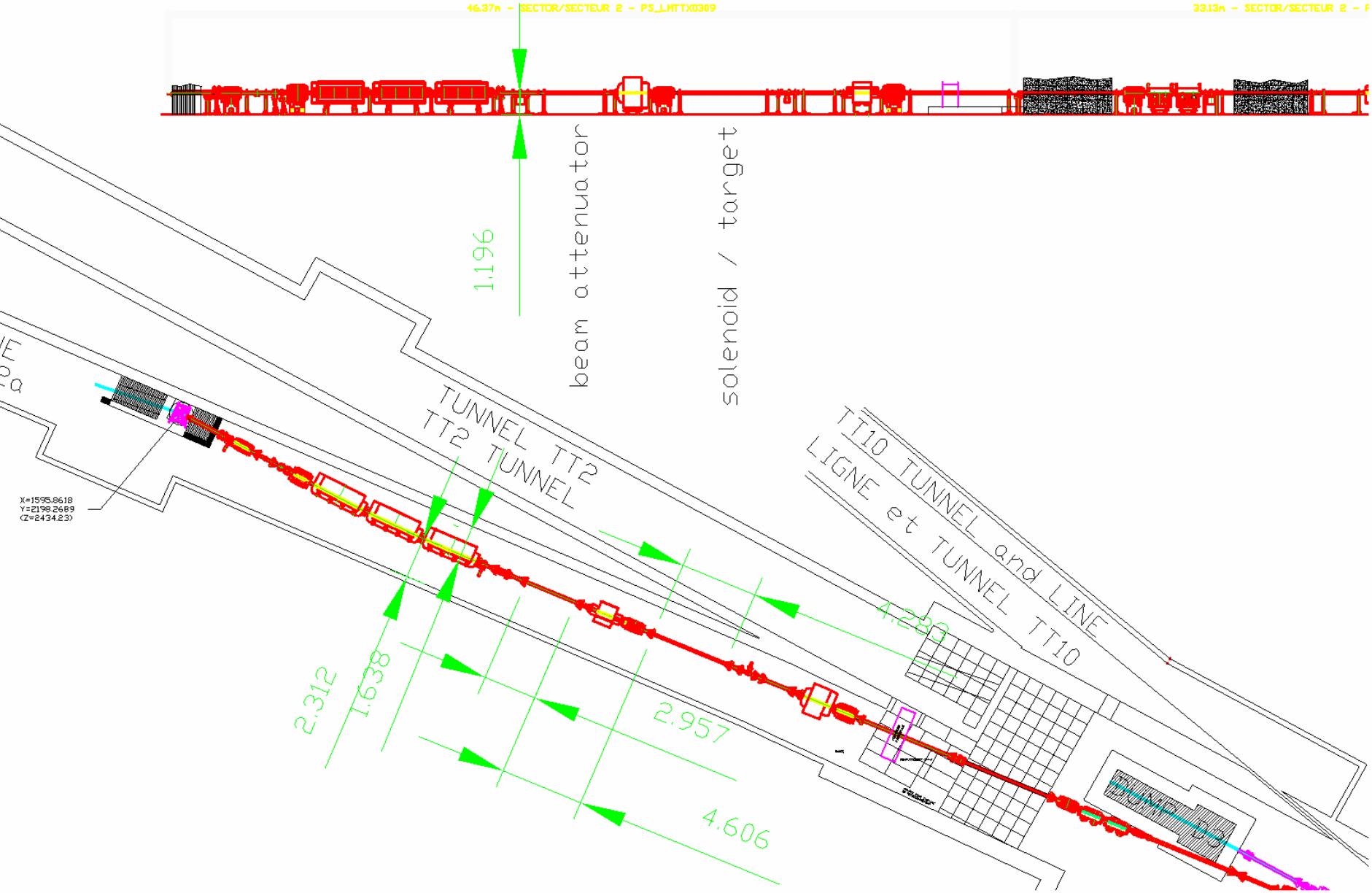
Concerning your proposal P186 to the INTC (Studies of a Target System for a 4-MW, 24-Gev Proton Beam), I am happy to inform you that following consideration at the meetings of 2 December 2004 and 3 March 2005, the experiment has been approved by the CERN Research Board. It will be known as nTOF11.

Yours sincerely,

J. Engelen

Target Test Site at CERN





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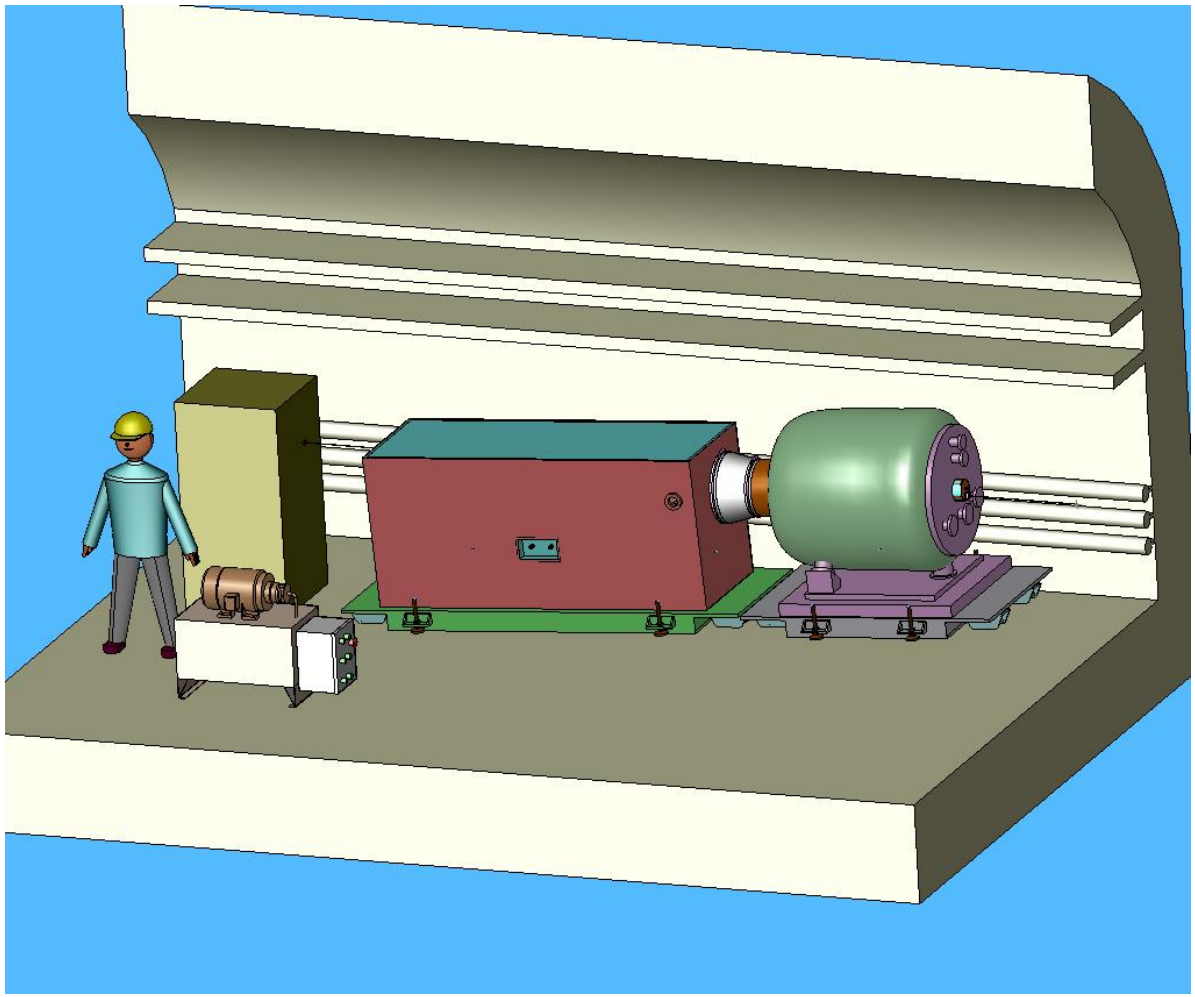
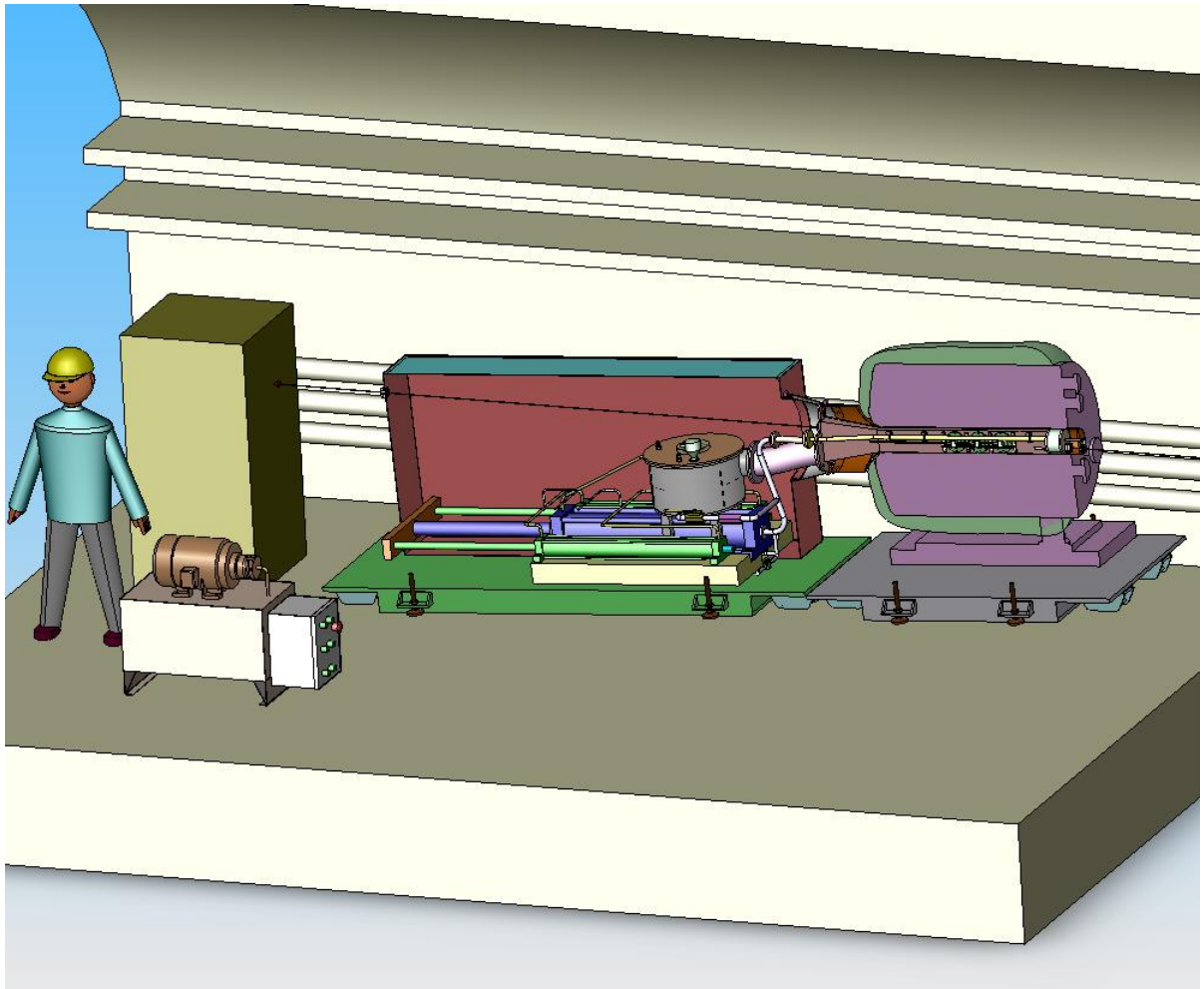
The Experimental Installation Point

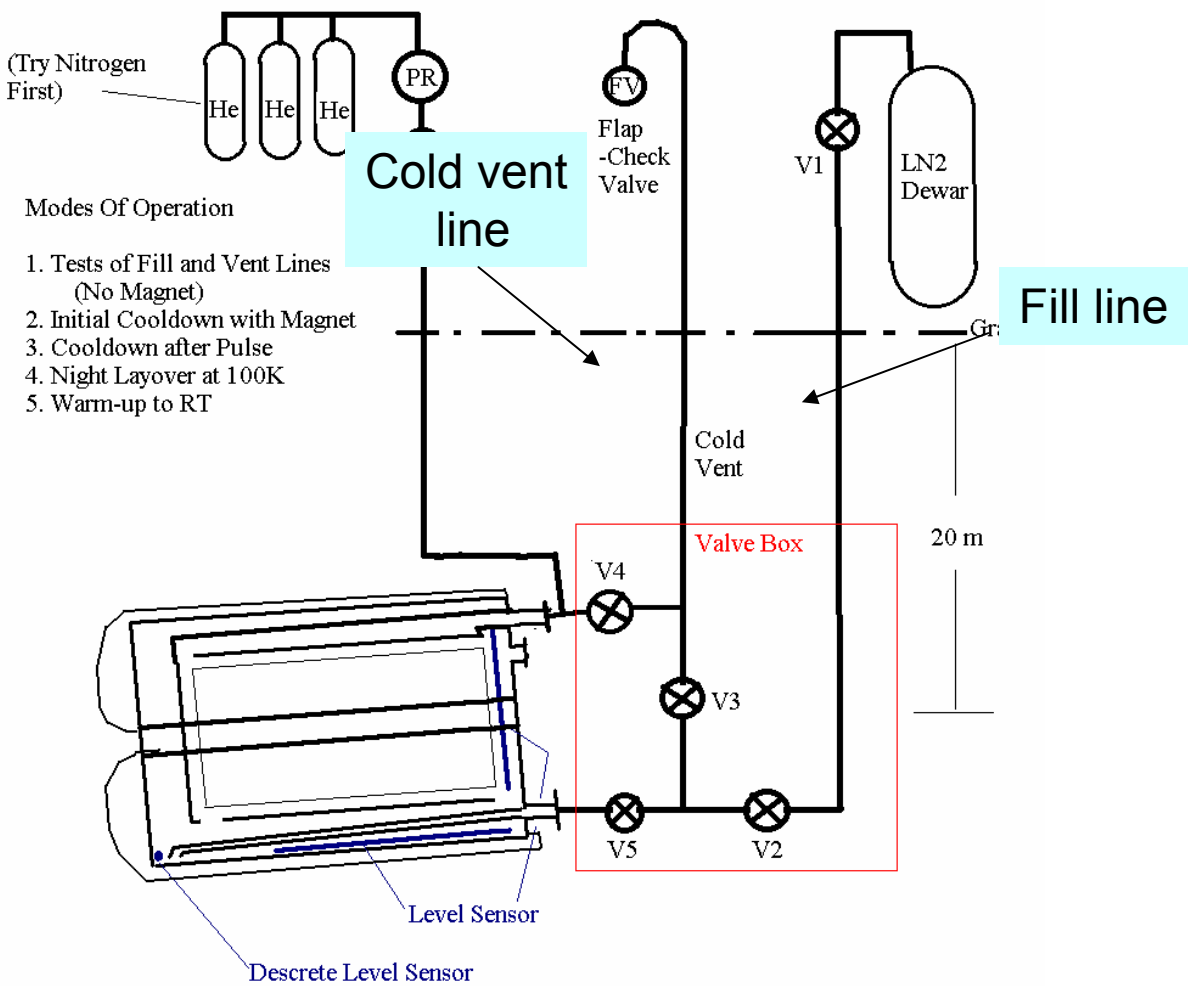
The Footprint of the Experiment



Hg Jet System Layout



The Pulsed Solenoid Cryosystem



Drawn by Peter Titus

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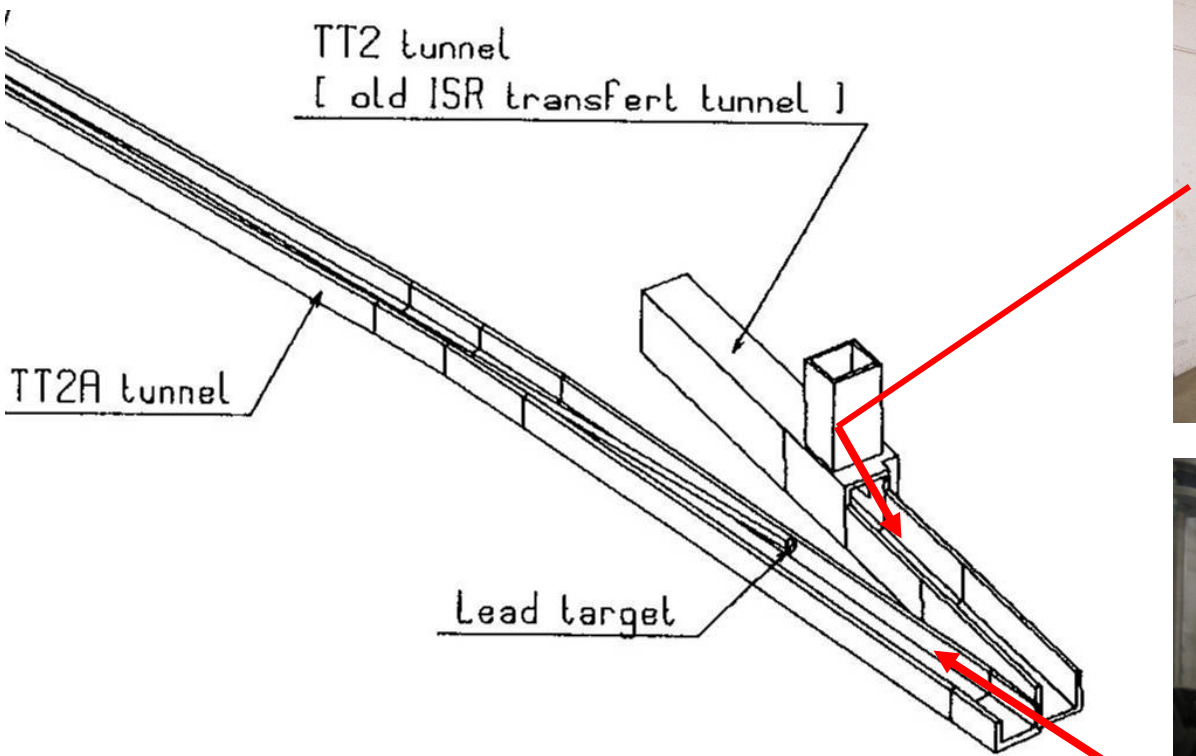
The TT2 Tunnel Complex



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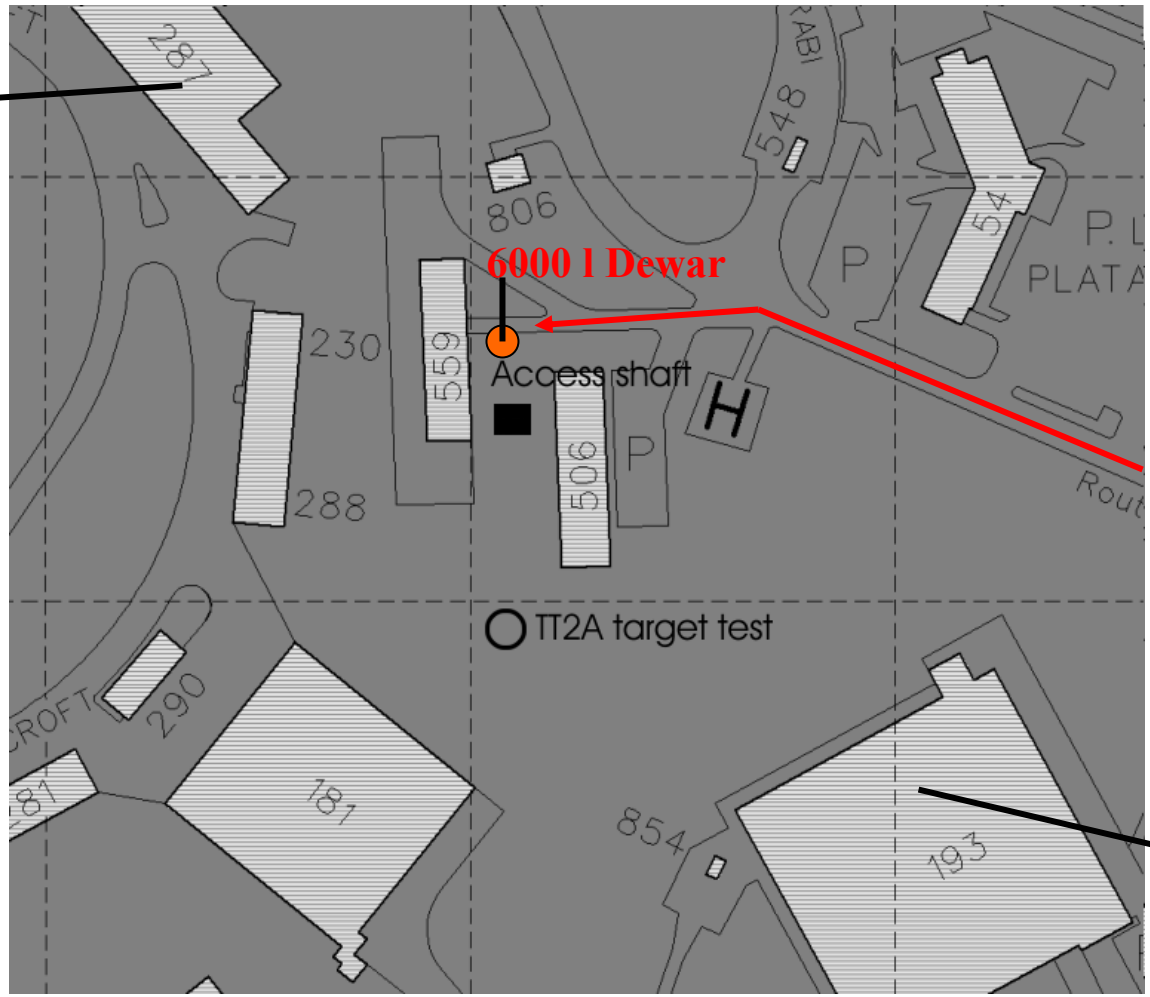
Surface above the ISR

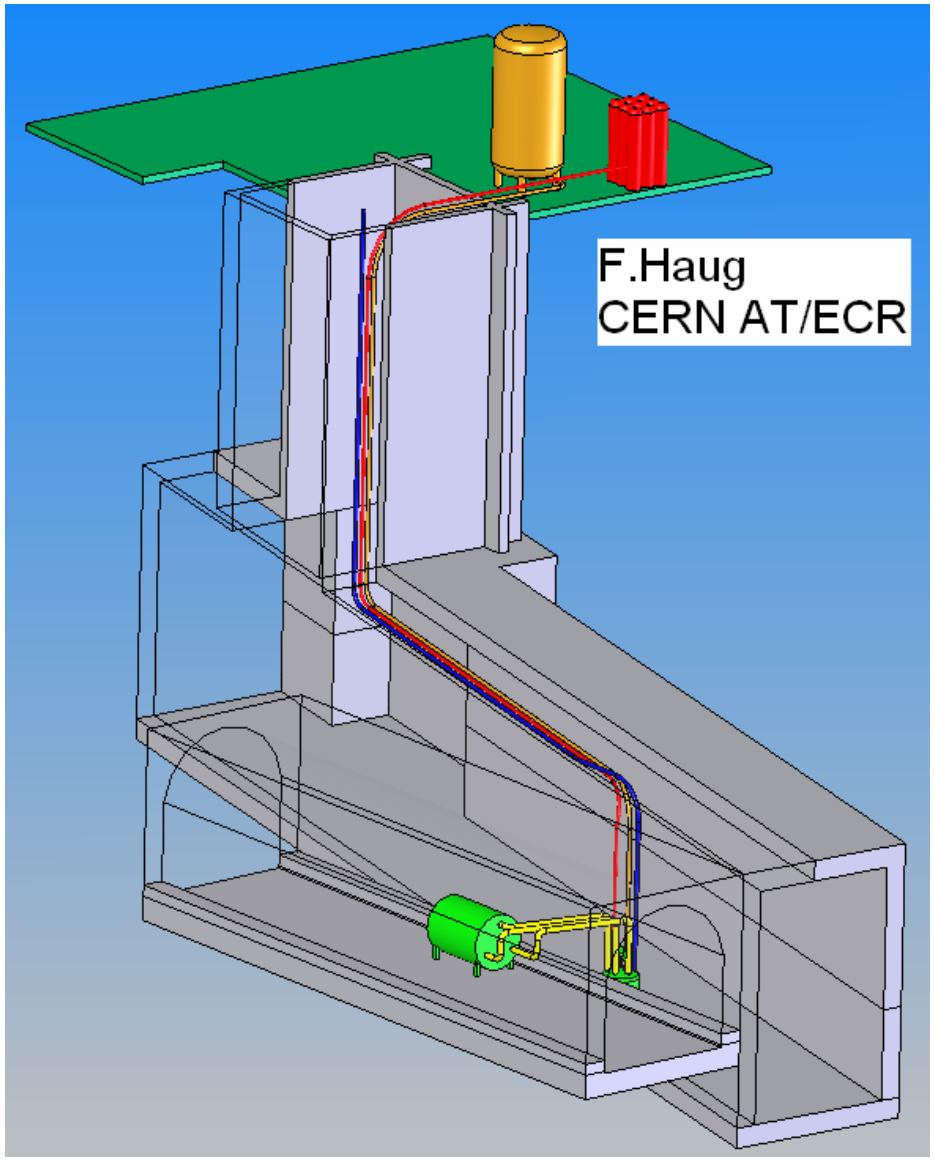
Two 18kV sub-stations



Access Route

One 18kV Sub-station

Cryosytem Layout



Collaboration Meeting CERN March 15-17

Met with various safety officers, engineers and physicists

- Chemical
- Fire
- Radiation
- Mechanical
- Electrical
- Power engineers
- Power networks
- Transport (Rigging)

Significant Baseline Changes

Hg operations

- Given go ahead for fill Hg into sump insitu within the TT2a tunnel

Pulsed Solenoid operations

- Cold vent to TT10 tunnel instead of surface
  - Partial flushing of LN_2 manditory
  - 100 liters residual LN_2 unacceptable
  - 1 liter residual OK (10 liter is the margin)

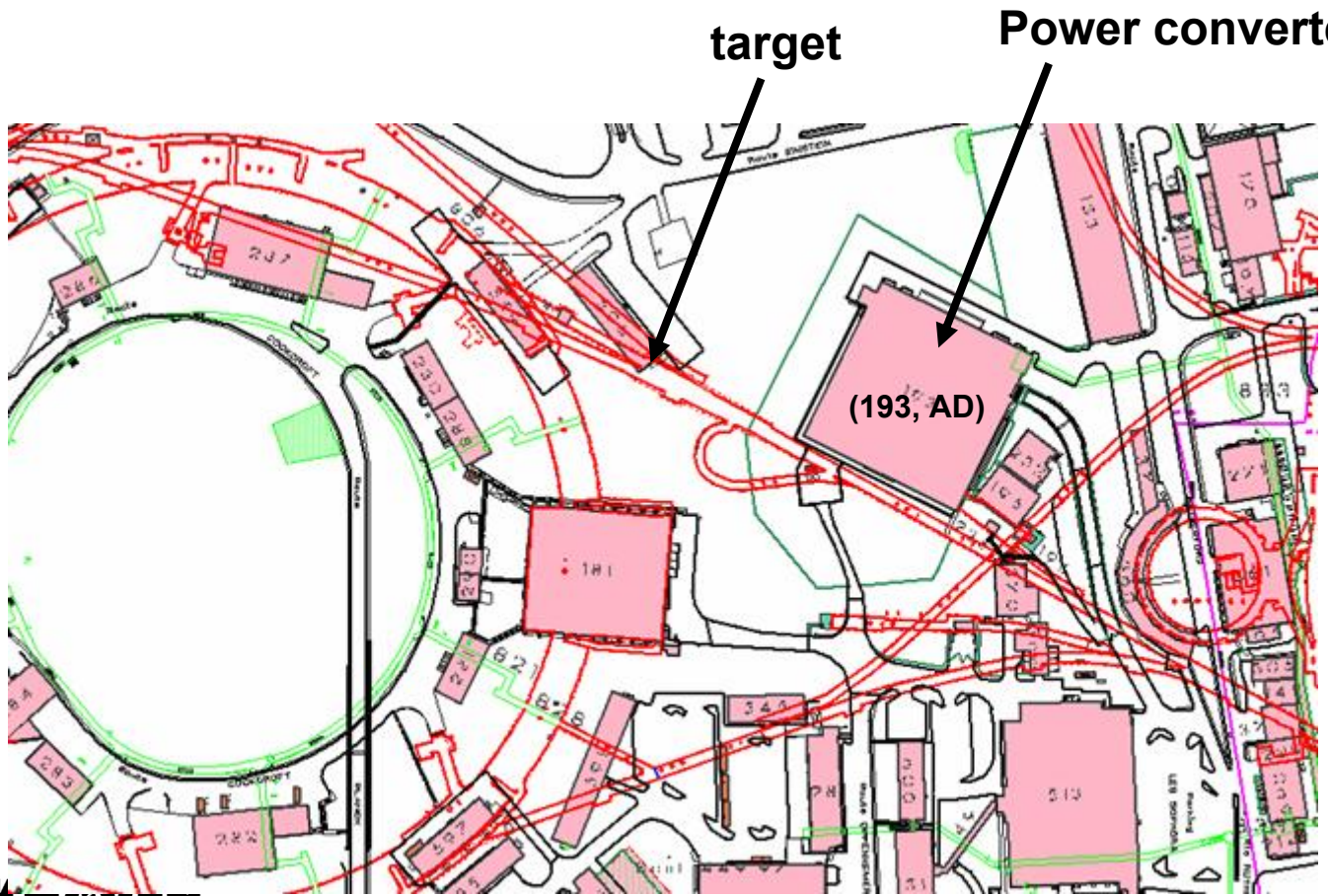
Power Supply

- Refurbish existing power supply
  - 8 MVA supply
  - $115 K move/refurbish/test/controls

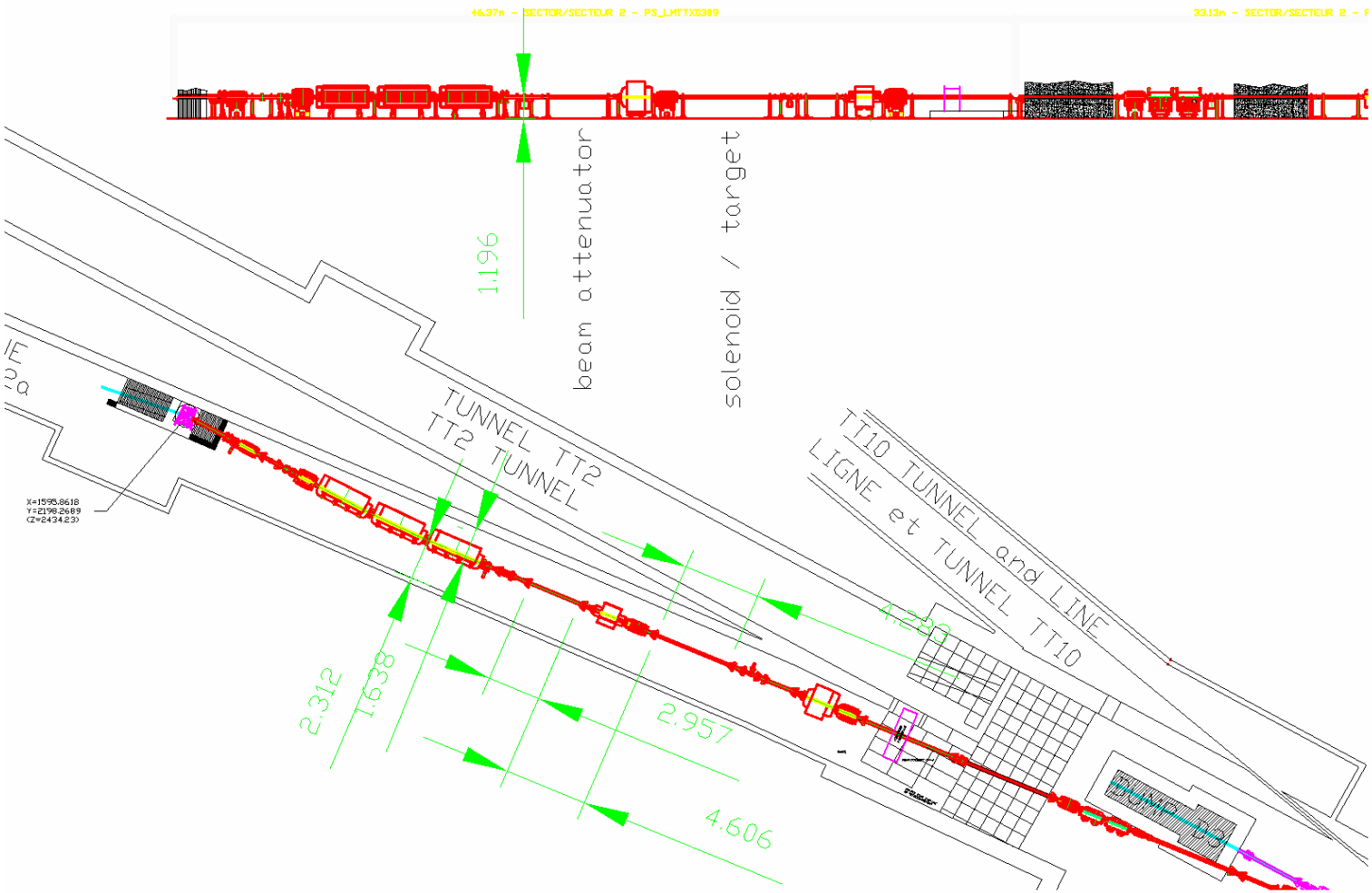
AB/PO proposition
8000Adc, 1000Vdc

Power Converters location:

- ***At building 193 (AD)***



The TT2, TT2a, and TT10 complex



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