

# Questions to Positron Group from CRWG (Central Region Working Group)

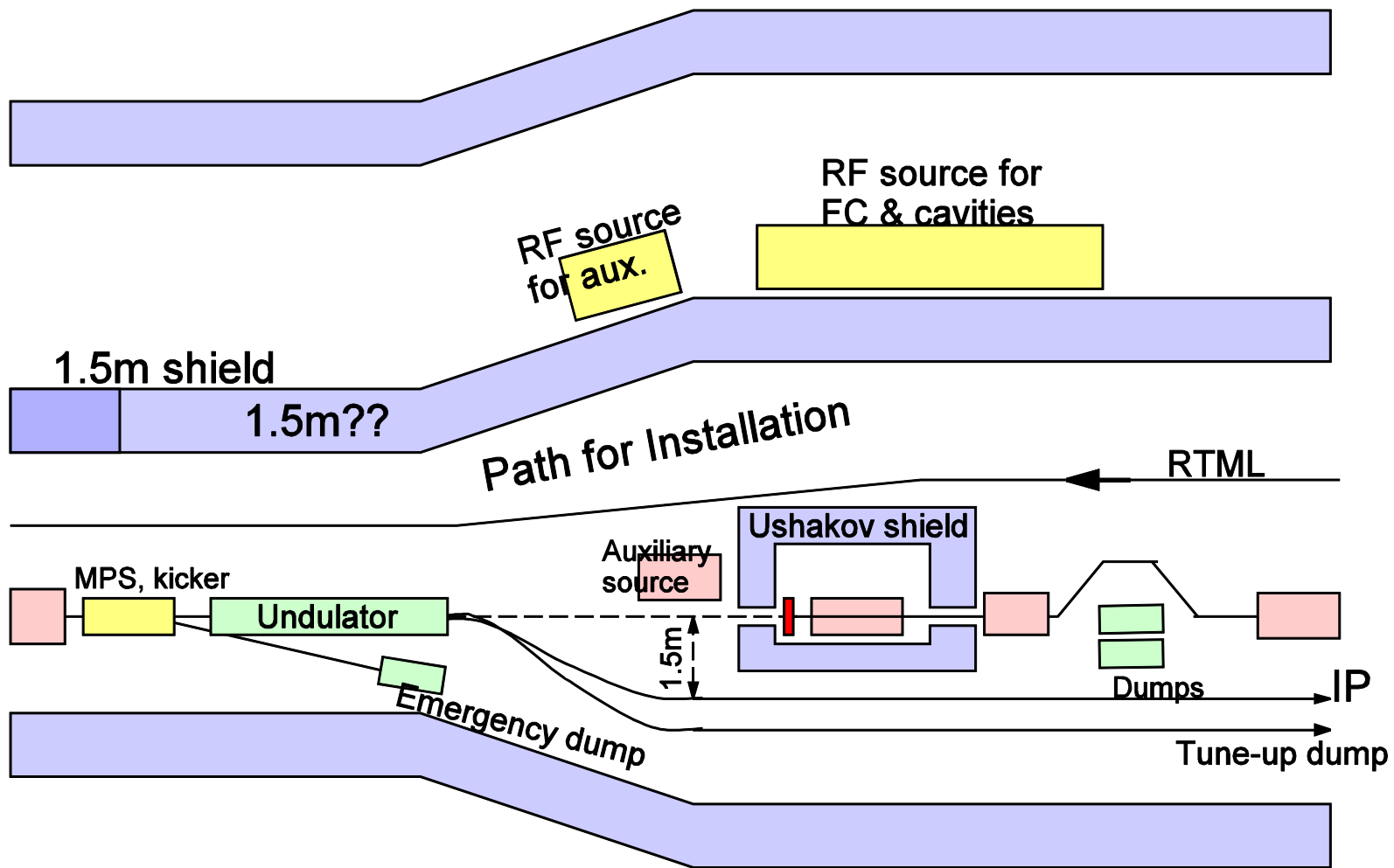
# Shielding Wall between Service and Accelerator Tunnels

- The thickness of the shielding wall separating the service tunnel and the accelerator tunnel in the main linac region is being studied. Seems to converge to 1.5m (from 3.5m in TDR).
  - This is possible under the constraint of no human access to the service tunnel during the main beam on.
  - 1.5m is sufficient when RF is on but beam is off.
- The shielding wall in the BDS region is now a concern in the CRWG
  - TDR describes only twin tunnel as a solution for flat region. No design for mountain region is given.
  - Natural extension from Kamaboko tunnel in ML region to BDS region would also be Kamaboko (we assume this in the present questions)

# Question A

- Is human access to the service tunnel in the positron source region necessary when the main beam (150GeV) is on?
- Answer:
  - The commissioning has to be made without necessity of any access during the operation.
  - Radiation level is controlled to avoid any damages on equipment in the service tunnel.
  - Radiation level is controlled to allow access to the service tunnel several hours later after the beam is turned off. It is effective to control the radiation dose according to ALARA principle for the unplanned access.

• X



# Question B

- In the model for which Andriy estimated the radiation around the target region, the target/flux-concentrator/solenoid/cavities are surrounded by a 1m thick wall (in addition to the wall between accelerator and service tunnels).
- Should the region around the photon/electron dump should also be shielded?
- Answer
  - Need an investigation to quantify the expected radiation level near the photon dump. The solution could be;
  - 1: Shield only the target area: least initial cost, but it could be expensive if additional shield is required in the operation.
  - 2: Shield down to the photon dump : most initial cost, but no additional cost.
  - 3: Shield only the target and reserve space for shield : intermediate, but installing shield later might be difficult.