

# RaDIATE BNL BLIP Irradiation Run Planning VC Meeting 6

10.17.16

## Present

ESS: Yongjoong Lee

FRIB: Frederique Pellemoine, Mikhail Avilov

CERN: Elvis Fornasiere, Claudio Torregrosa, Marco Calviani

BNL: Leonard Mausner, Nick Simos, Dimitri Medvedev

KEK: Taku Ishida, Shunsuke Makimura

RAL: Chris Densham

FNAL: Patrick Hurh, Sujit Bidhar, Kavin Ammigan

OXFORD: Slava Kuksenko

PNNL: David Senior

## Notes

- Nick has had a first pass at the target box FLUKA calculations and will share preliminary results soon.
  - Energy masks will be incorporated to vacuum degrader to account for non-uniform energy degradation from high-Z capsule (contains graphite outer fillers).
  - Beryllium capsule also contains graphite outer fillers, but energy degradation from beryllium and graphite is very similar. So, possibly no need to account for in vacuum degrader.
  - Nick needs specimen material sheets with impurity contents for each capsule
    - including SS window material sheet
- Experiment likely to be scheduled at the beginning of February. For 8-week run, we may have to run with Thorium at BLIP.
- Capsule thickness must be confirmed by mid-November, after which Nick will initiate design and fabrication of capsule holders.
- BNL has two Type A CROFT casks available for use:
  - Will need to re-inspect casks and measure internal dimensions and volume to determine if entire capsule will fit.
  - Need to identify shipping container for Ti foils shipment from BNL to Oxford.
  - LANL cask, if used by ESS, will need to be inspected by BNL. Documentation will also need to be provided to BNL.
  - Entire capsules that will need to be shipped out of BNL: Al, Si, high-Z, Be.
    - Graphite and US/DS Ti capsules will be opened/sorted at BNL.
  - Shipping paperwork can rely on calculation of isotope inventory rather than measurements.
- Rastered beam expected to move around by about 3-5 mm during irradiation period.
- Nick to work on 'Work For Others' agreements with individual institutions in the near future. Discussion has already started with BNL.

- Markings on capsule frame to identify capsule content and orientation will be required.
- Possibility to share PNNL fixed costs for capsule shipment, disassembly and fixture design/fabrication. Institutions are interested in doing so and will discuss further.
- Nick/Leonard to share pictures/drawings of the capsule opening device.
- All capsule contents confirmed
  - Specimen fabrications ongoing
  - Currently planning to ship all capsules to BNL by early January.
- FNAL to coordinate welding activities at EB industries with BNL for Be, C and US/DS Ti capsules.