UT-BATTELLE

Princeton Design Meeting Review

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Targetry Video Session

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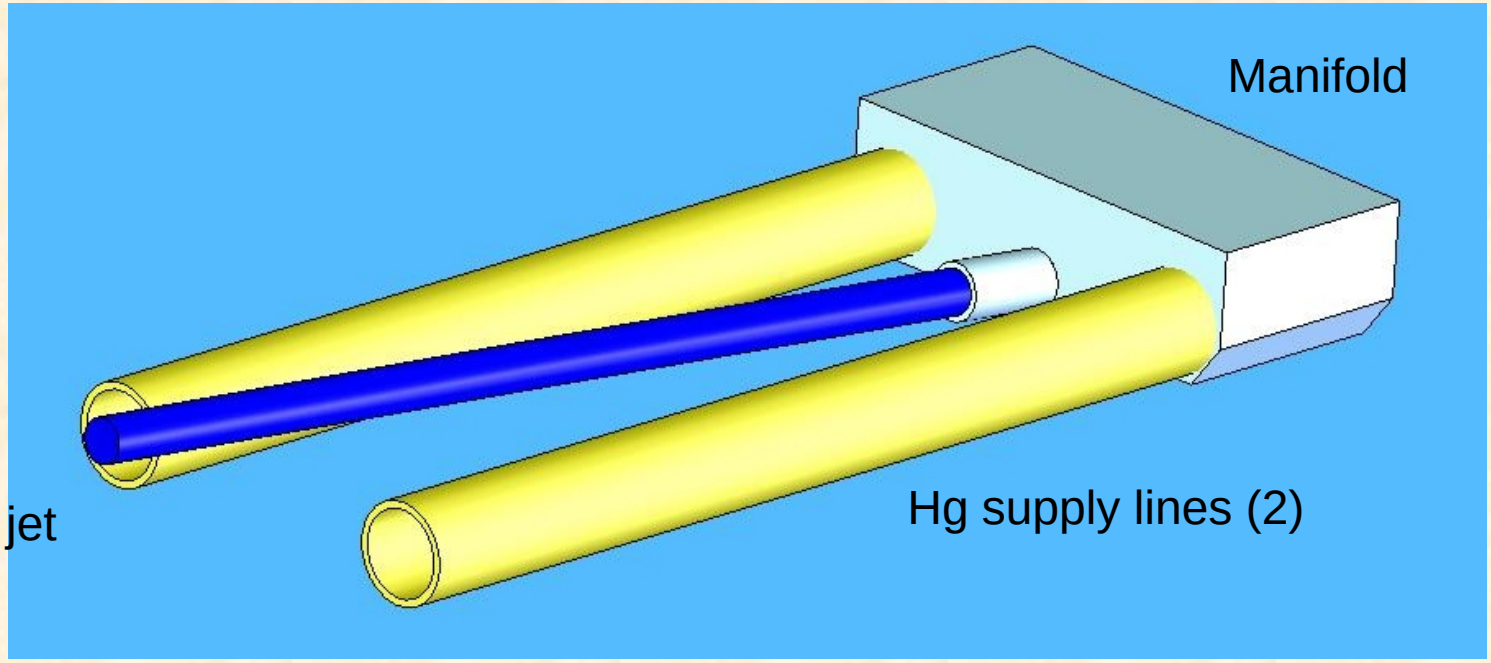
OAK RIDGE NATIONAL LABORATORY
U. S. DEPARTMENT OF ENERGY

Target Design Collaboration Mtg Princeton Nov 15-16

- **Target Design**
- **Optical Diagnostics**
- **Solenoid/Target Integration**
- **Control System**
- **CERN Facility Issues**
- **Princeton Nozzle/Catcher Tests**

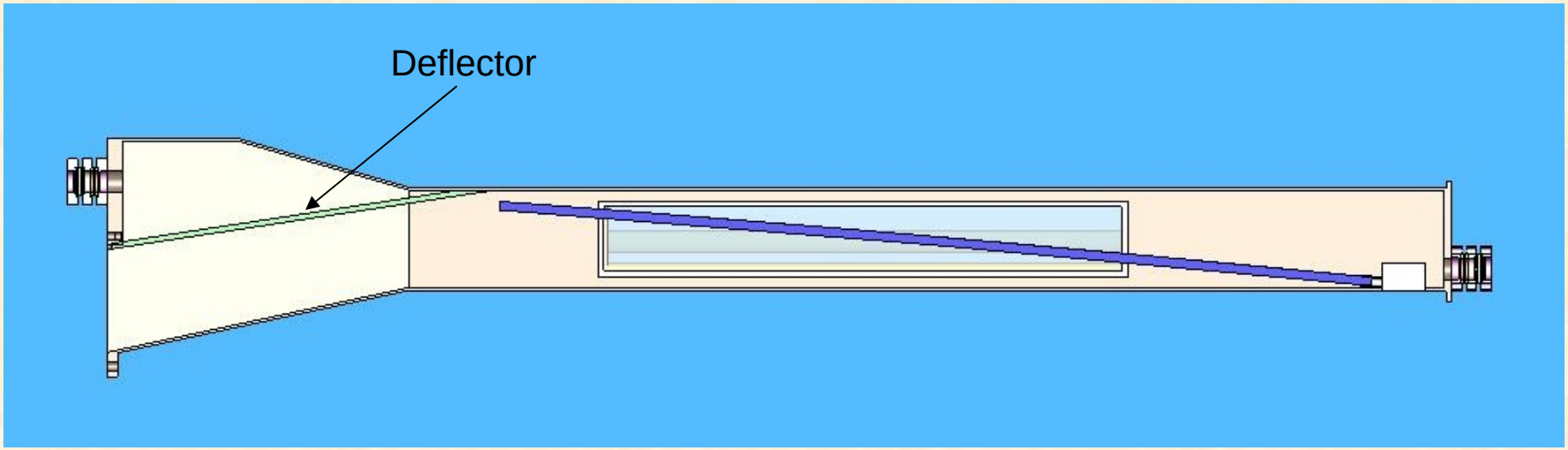
Target System Design

- **Hg flow / nozzle becoming design issue**
  - **High flow in confined space**
  - **Need to incorporate Hg reservoir just upstream of nozzle to minimize pressure drops**
  - **Princeton tests should be horizontal to be prototypic of CERN configuration**



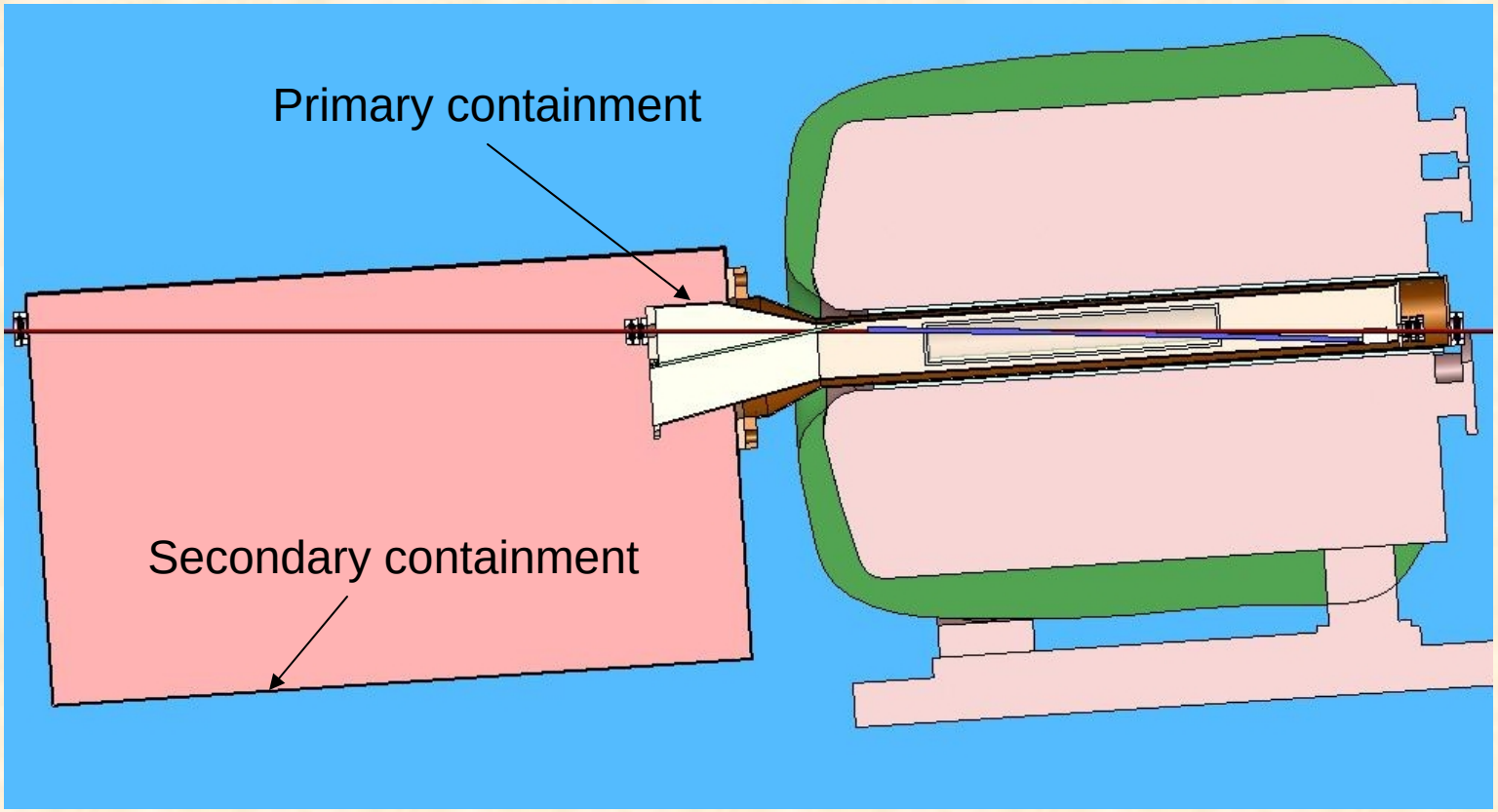
Hg Drainage

- **Minimize potential Hg backwash and spray by providing deflector plate to direct Hg into sump**
- **Deflector to be fabricated from TiAl6V4 beam window material**
  - **Keep thickness minimal due to proton beam interaction**



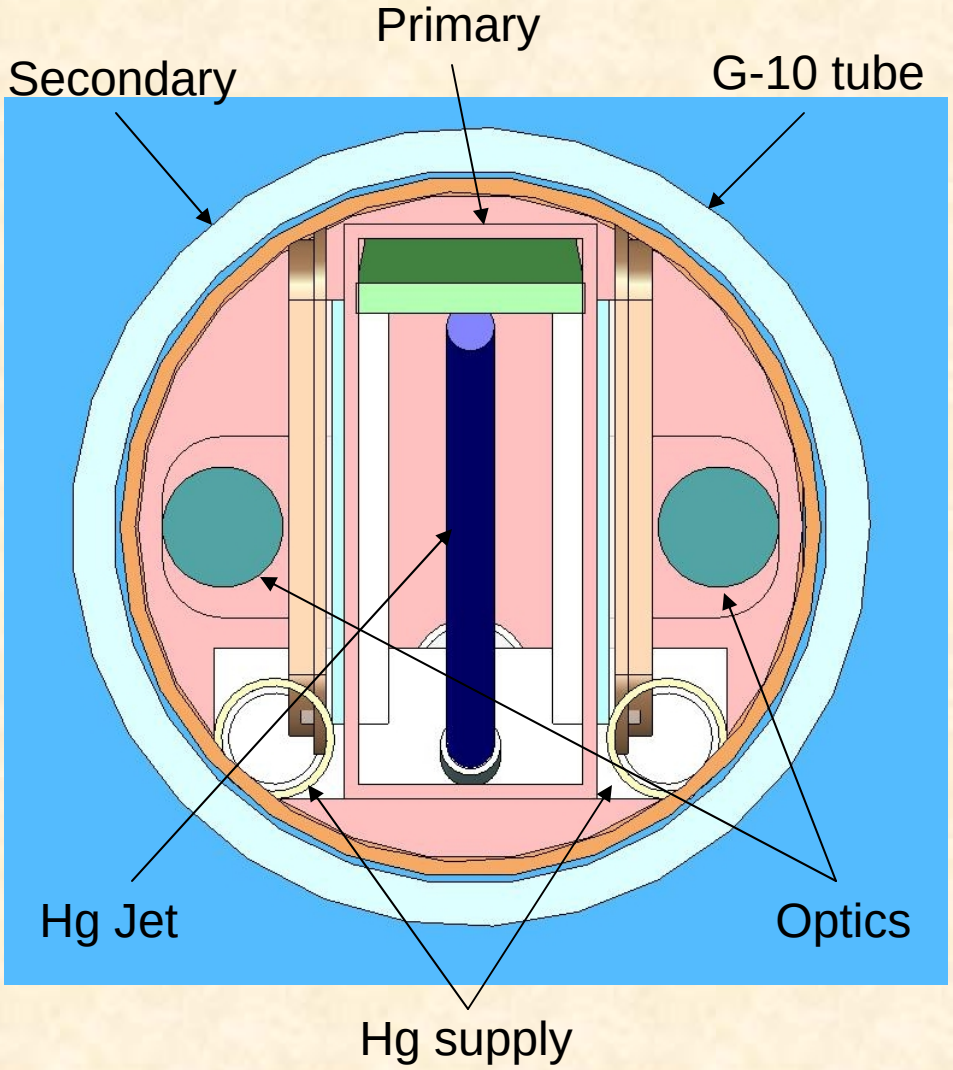
Beam Windows

- **Proton beam windows will be 1 each at primary/secondary entrance/exit**
  - **Image incorrectly shows double windows on primary**



Other Design Issues

- **Optical diagnostics based on fiber bundles**
  - **Back illumination with fiber optic panel**
  - **Maximize room available for lenses by placing both Hg supply lines on one side of primary with illuminator panel**
- **Assembly will require fiducials on solenoid, secondary entrance/exit windows**
- **Control system yet to be finalized**
  - **Individual systems can have separate controls, but should be integratable**



Current Layout

- **Design still in conception, with Princeton comments to be incorporated**