

# Titanium Target Module Changes

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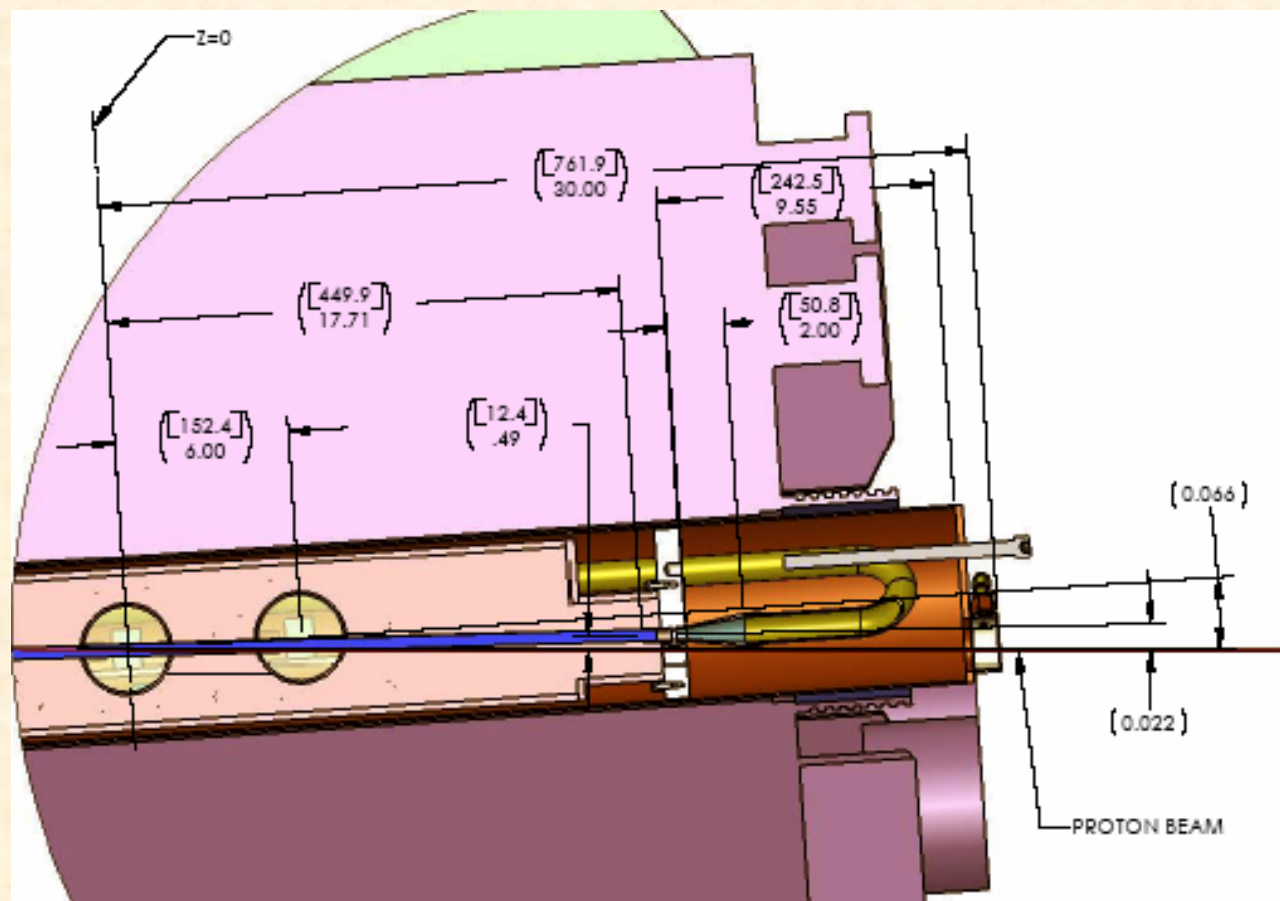
**T.A. Gabriel**

**MERIT VRVS Meeting**

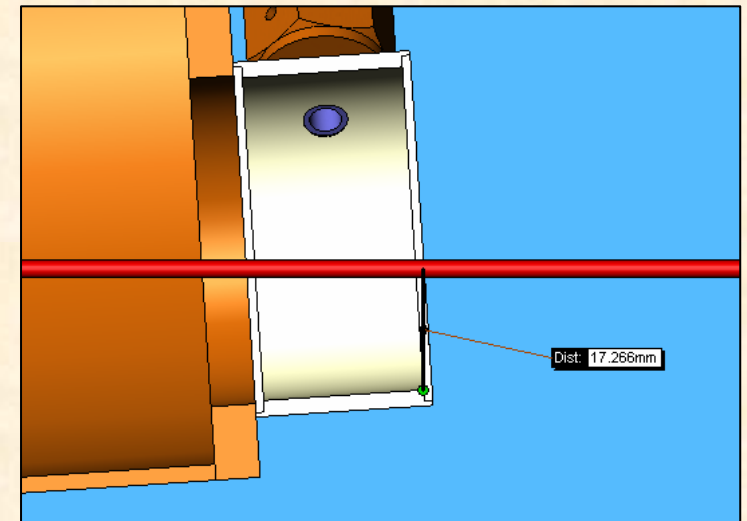
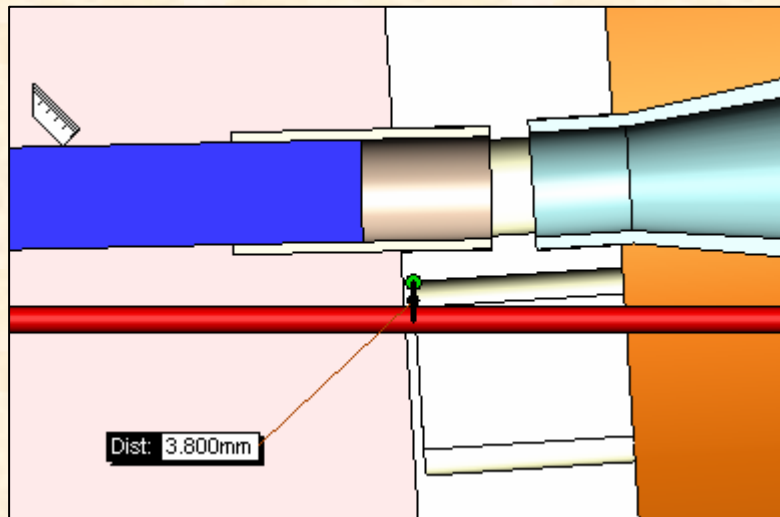
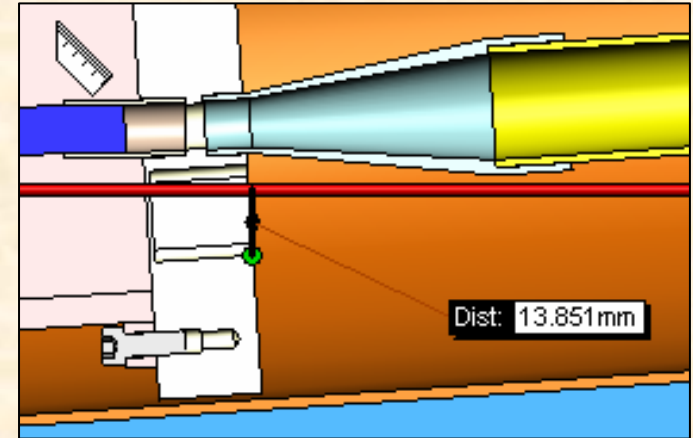
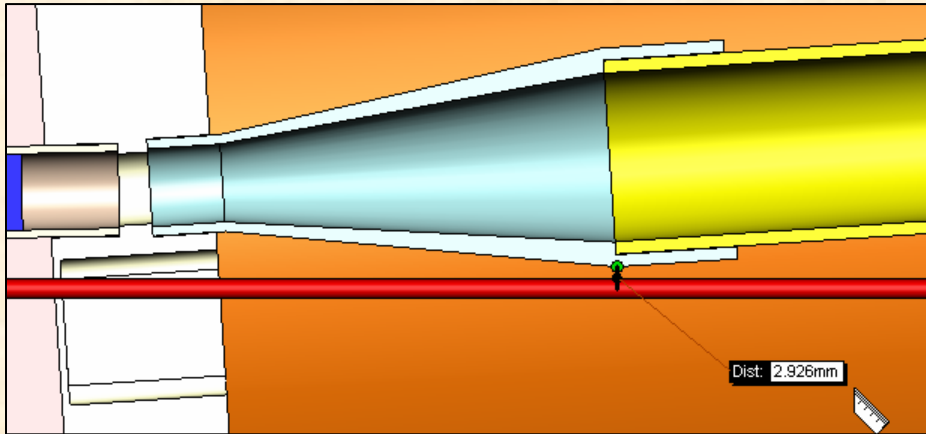
**February 1, 2006**

# Current Nozzle Layout

- Start  $Z=-450\text{mm}$
- Angle  $22\text{mrad}$ 
  - Interaction length becomes  $45\text{cm}$
- Elevation  $12.4\text{mm}$  above beam
- Reducer length  $50\text{mm}$
- No upward vertical scanning



# Upstream Clearances



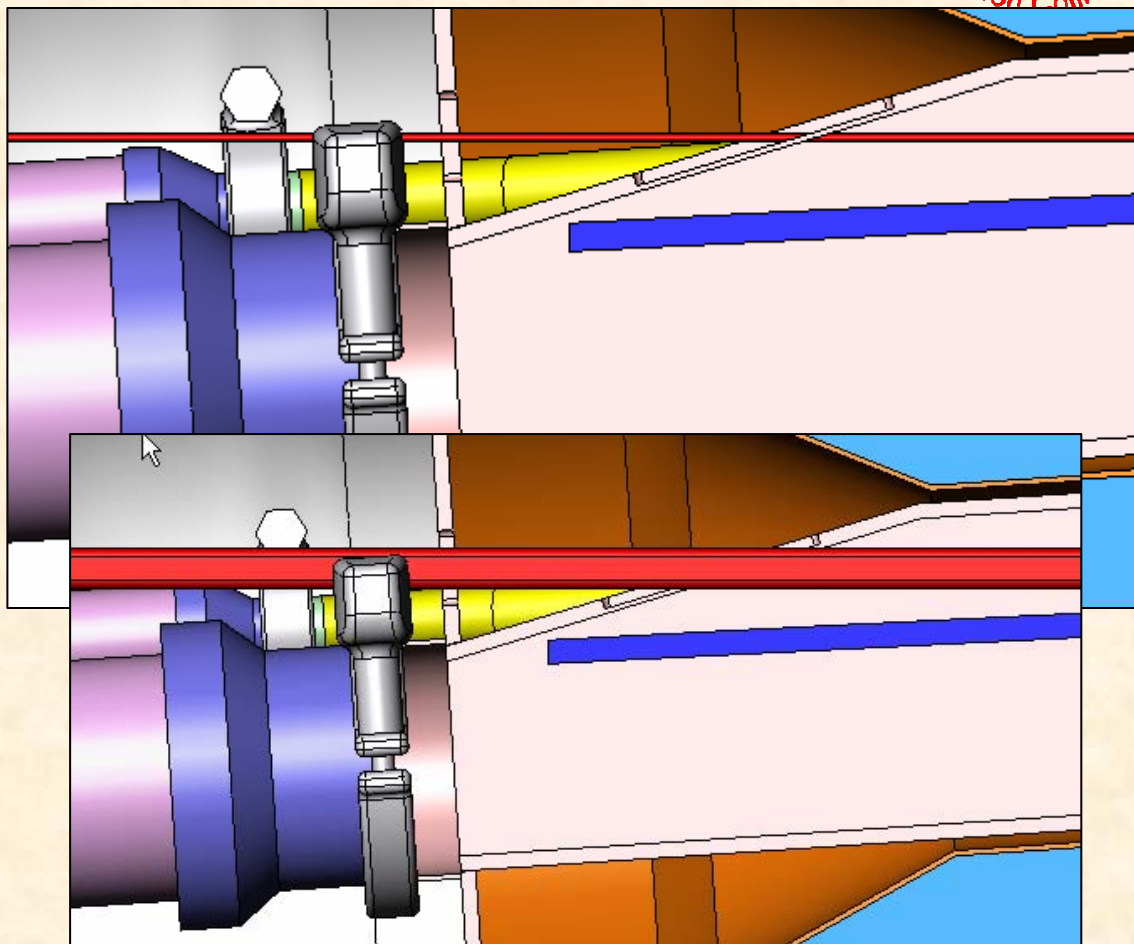
OAK RIDGE NATIONAL LABORATORY  
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UT-BATTELLE

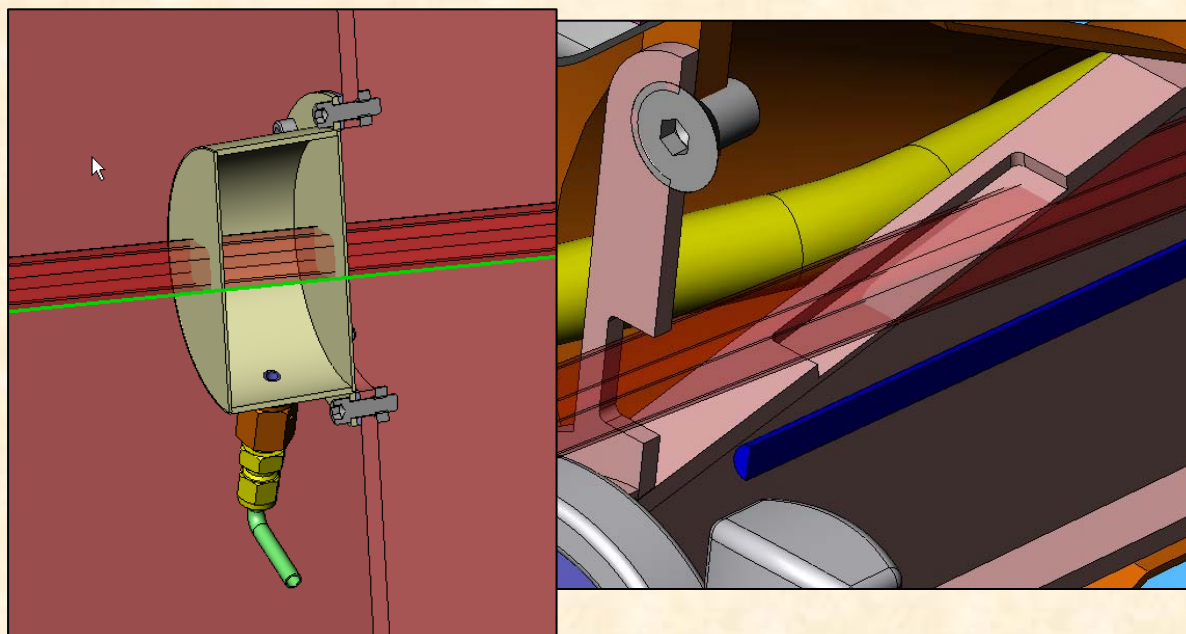
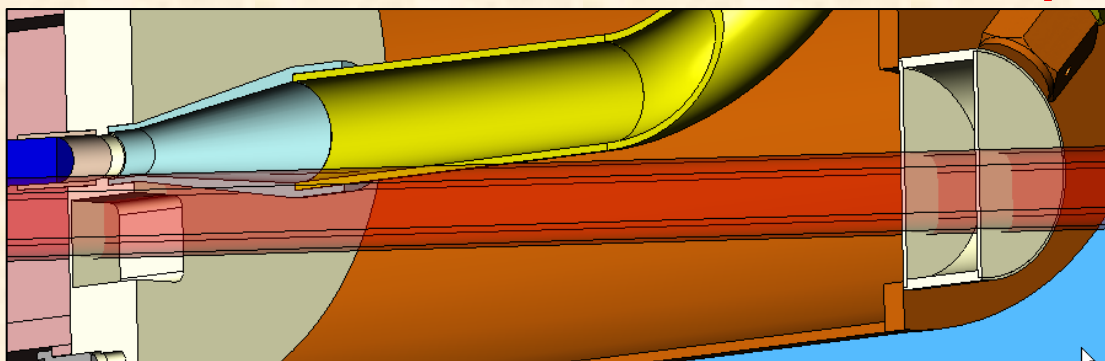
# Downstream Clearances

- **Beam clearance not an issue, can accommodate complete vertical scan**
- **Jet will probably contact sloped plate**



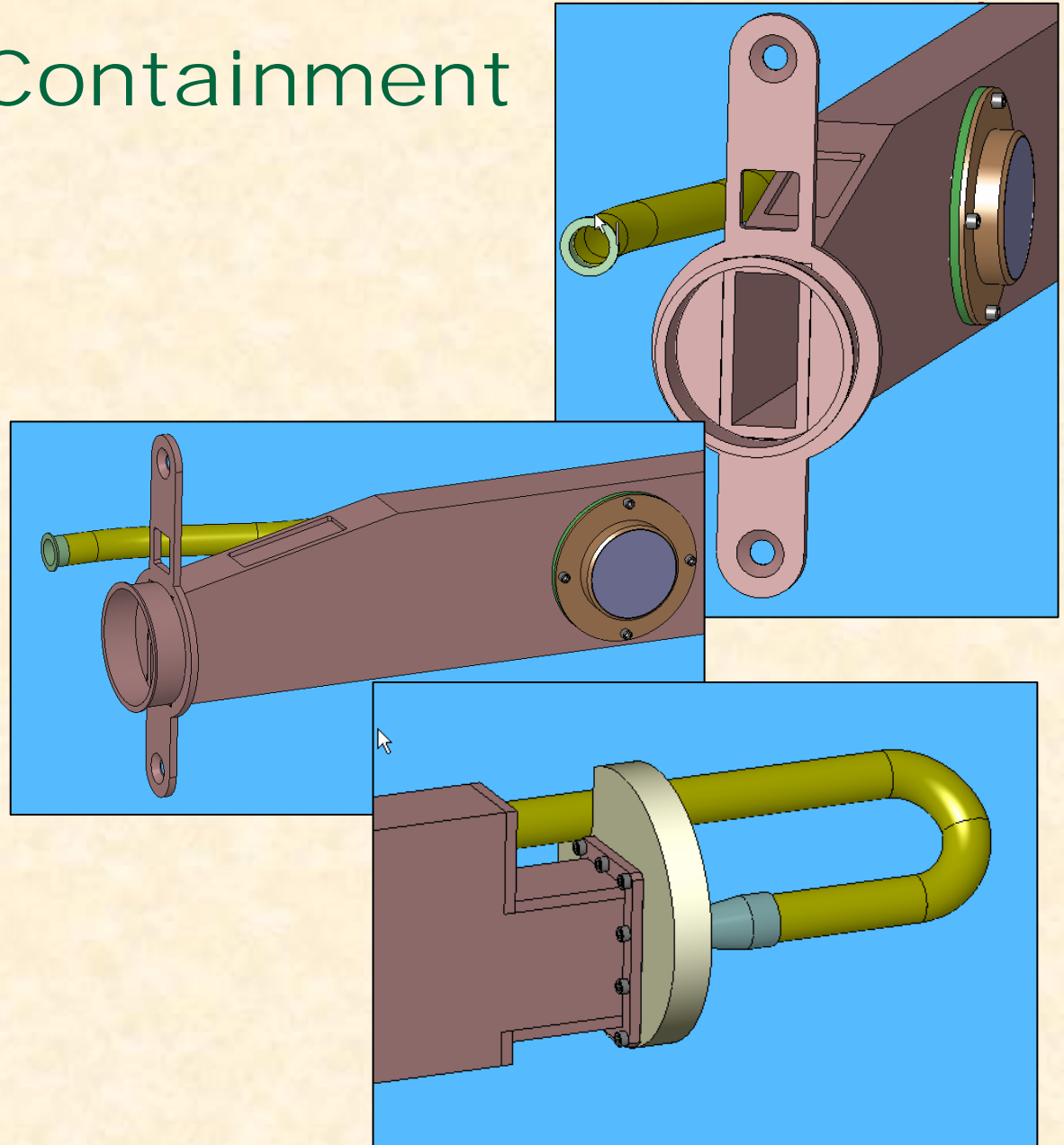
# Scanning Clearances

- Full side scanning can be accommodated at all beam windows
- Vertical scanning limited to downward direction
- Installation angle extremely important!



# New Primary Containment

- **Simpler fabrication**
  - Flat sides and bottom, tapered top
  - Components interacting with beam Ti6Al4V, others Grade 2 Ti (assumed to be cheaper)
- **Upstream end unchanged**
  - Replaceable nozzle assembly
- **Taper angle  $\sim 13^\circ$** 
  - Beam window interaction length 9mm
- **Sanitary flanges, tubing, reducer also Titanium**





# Design Nearly Complete!

- **Target module detail drawings being completed**
- **Final system "tweaks" (lengths, beam window locations, baseplate interfaces) to be performed**
  - Drawings will automatically update if only dimensional changes made to models
- **Some purchased item details need to be updated on Bill of Materials**
- **Need feedback from Ti fabricator on target module drawings before release**