Commissioning the DARHT-II Accelerator Downstream Transport and Target

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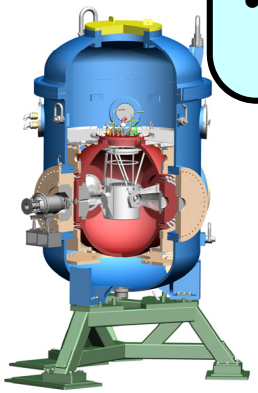
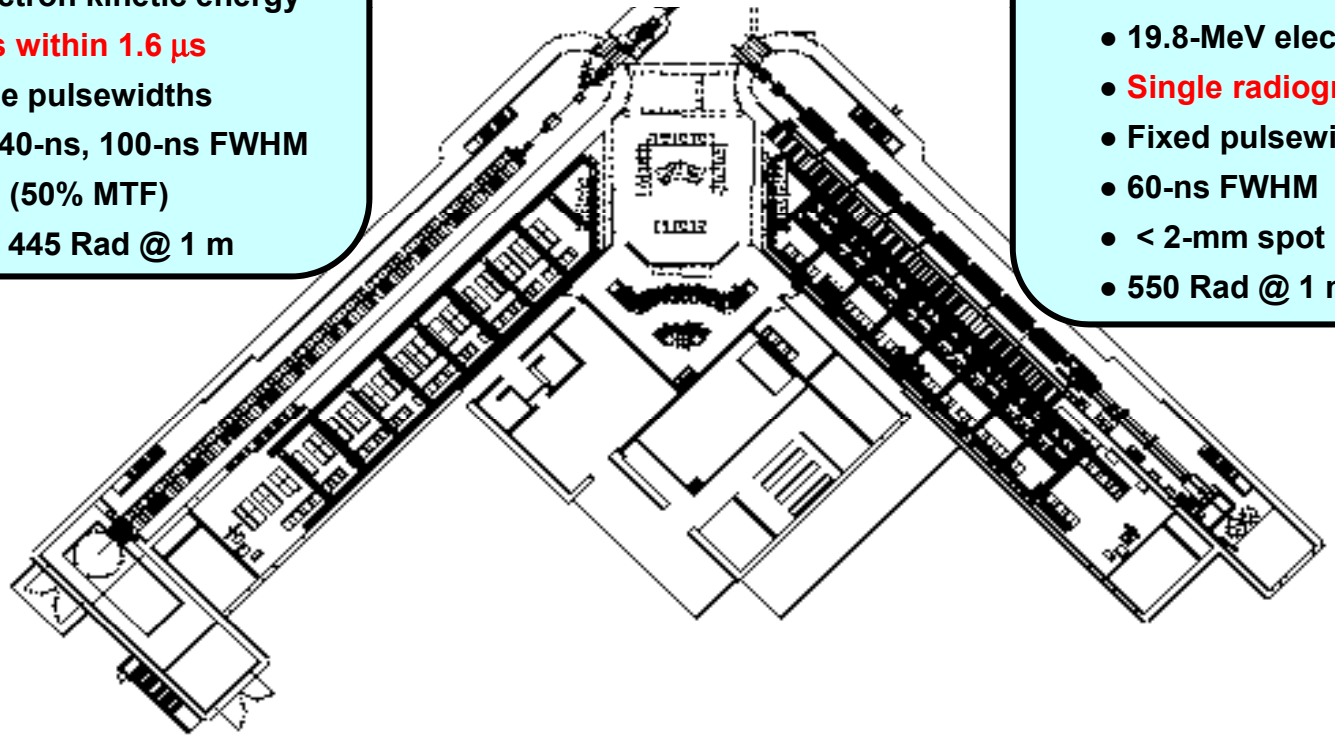
Dual-Axis Radiographic Hydrotest Facility

- Flash radiography of large, high-explosive driven experiments contained in vessels.
- Two accelerators provide simultaneous, orthogonal radiographs.



- Axis 2, Completed 2008
- Linear Induction Accelerator
- 2.0-kA electron-beam current
- > 17-MeV electron kinetic energy
- 4 radiographs within 1.6 μs
- Programmable pulsewidths
- 35-ns, 40-ns, 40-ns, 100-ns FWHM
- < 2 mm spots (50% MTF)
- 170, 185, 170, 445 Rad @ 1 m



- Axis 1, Completed 1999
- Linear Induction Accelerator
- 1.8-kA electron-beam current
- 19.8-MeV electron kinetic energy
- Single radiograph
- Fixed pulsewidth
- 60-ns FWHM
- < 2-mm spot (50% MTF)
- 550 Rad @ 1 m

High level requirements for the downstream transport system have been demonstrated

- Deliver 4 short pulses to target over 1.5 μsec
- X-ray spot size less than 2.3 mm 50% MTF
- Dose format of 100 R, 100 R, 100 R and 300 R at 1 meter from target for four pulses

Considerations impacting system design and performance will be presented

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