Future Targety Plans

NFMCC Collaboration Meeting

Lawrence Berkeley National Laboratory

January 26, 2009
Focus of Future Targetry Efforts

- Post-MERIT
- Magneto hydrodynamics
- IDS-NF
Nozzle performance:

The Issue

![Image of nozzle performance data points]

- B=0T
- B=5T
- B=10T
- B=15T

Distance from nozzle, cm

Jet height, cm
Simulated Jet Vertical Dimensions

R. Samulyak
The 180° Bend

Hg Supply Line

Hg Jet

Nozzle
The Primary Vessel Optics

Optics aligned horizontally for vertical view only of Hg jet

Harold G. Kirk
Two Phase Hg Simulations

R. Samulyak, W. Bo

No Magnetic Field
100J/g Peak Energy Deposition
$t = 30\mu s$

External View
Internal View
The Hg Capture System

V. Graves, ORNL

Harold G. Kirk
The Jet/Beam Dump Interaction

T. Davonne, RAL

Harold G. Kirk
Fluka Simulation - Energy deposition in mercury pool with 24GeV beam

How much of the beam energy is absorbed in the beam dump?

T. Davonne, RAL

T. Davonne, RAL
Eruption of mercury pool surface due to 24GeV proton beam

Autodyne simulation
Splash following pulse of 20Terra protons
IDS-NF Target Station Infrastructure

Build on Study 2 Target Station Concepts

The Target Hall

The Hg Handling System

V. Graves, ORNL

Harold G. Kirk