Follow-on MERIT Testing at ORNL

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New Capabilities at ORNL

- Considering pursuit of other liquid targets (LBE) or additional Hg-related R&D with MERIT equipment
  - Performing integrated system testing (no-beam) at ORNL would be beneficial

- Discussions with ORNL Fusion Energy Division, indicate some existing experimental power supplies will be moved from Y-12 to ORNL this year
  - Had considered this option prior to CERN experiment but could not pursue due to schedule constraints

- Some of the power supplies will have capability to power MERIT solenoid
7627 Power Supply Building

• New facility to be located near SNS Target Test Facility bldg

• Construction has started
  – Schedule completion: Sept 2008

• Several power supplies will be installed
Bldg 7625

- Pit capable of housing MERIT experimental equipment
  - Approximately 40ft x 15ft x 12ft deep
- 5000-gal LN2 dewar in place
- 20T overhead crane
Vertical field power supplies (capability of each)

- 650V peak
- 15,000 A pulsed > 5 sec

Voltage and/or current can be controlled by SCR gate waveform control
Comments

- Major infrastructure should be available in late 2008, but some connection costs will be incurred
  - Cost estimates are being obtained, should be available in March

- Hazard analysis (radiation, Hg, LBE) will have to be performed, but no major obstacles envisioned

- Hg system access and operations in activated condition unknown
  - Try to replace activated components or clean syringe pump such that it can be green-tagged?
  - Equipment access and modification will be more complicated (costly) than before experiment

- Other power supplies will be available (capabilities unknown at this time) that might be useful for other HEP experiments in the future