

# 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



Bldg 7627



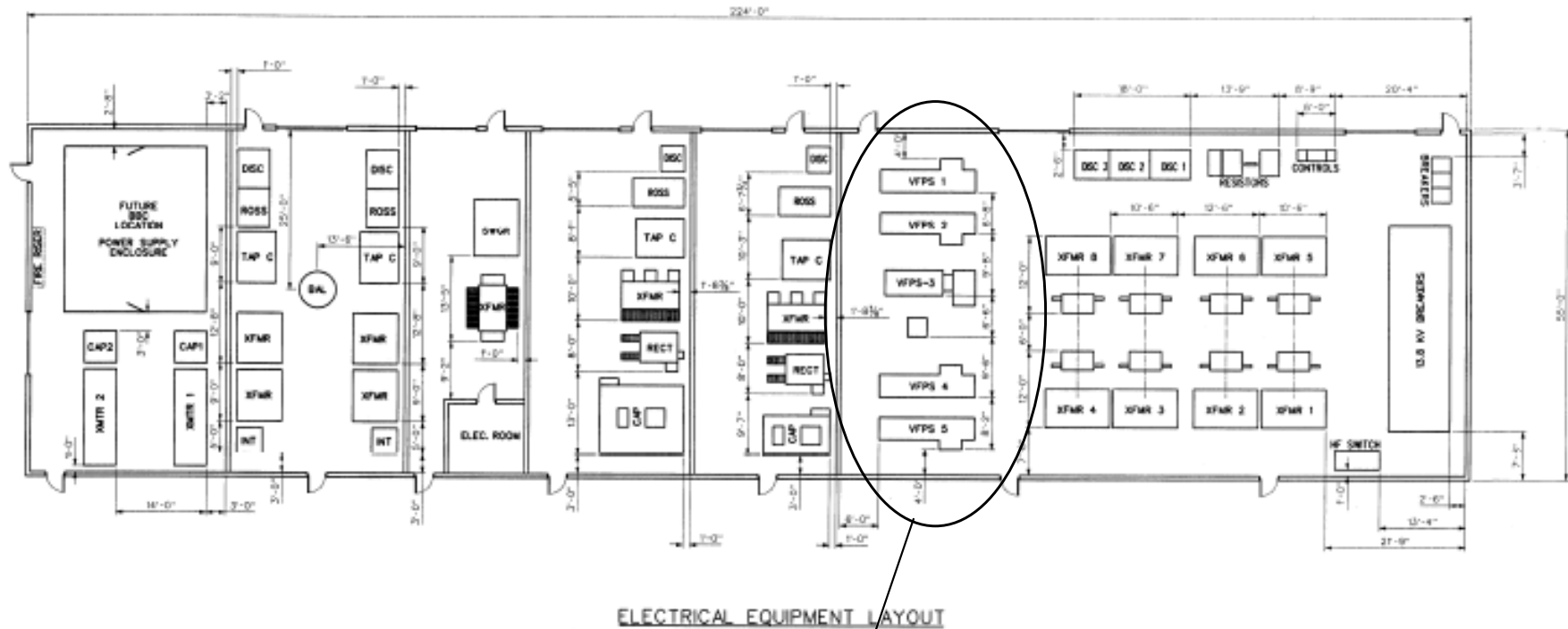
# Bldg 7625

- **Pit capable of housing MERIT experimental equipment**
  - Approximately 40ft x 15ft x 12ft deep
- **5000-gal LN2 dewar in place**
- **20T overhead crane**



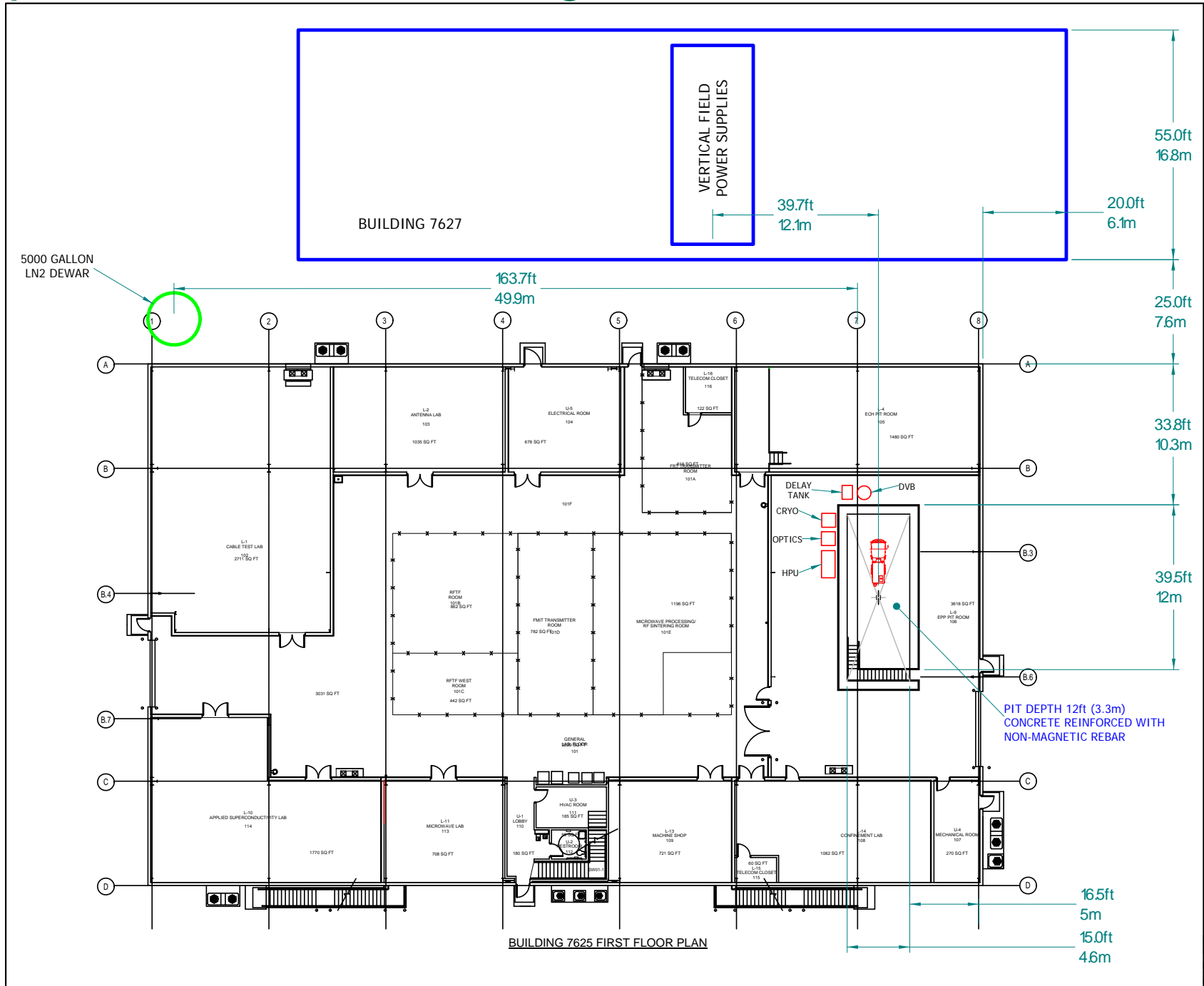


# Equipment Layout 7627



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

# Proposed MERIT Layout



# 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**