Hg Jet Update

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MERIT Videoconference

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Syringe Design Review Held Jul26

- Internal ORNL review of syringe & pump subsystems
- Reviewers were ORNL engineers with significant hydraulics experience
- Review held to allow procurement of syringe to be initiated ASAP
  - BNL procurement with ORNL technical oversight
- Expect lead time of 20+ weeks
- Estimated cost: $50K - $60K
Syringe Procurement Consists of These Items

- Complete system design based on specified requirements
- Piston pump (inside secondary containment)
  - One 10-inch Hg Pump Cylinder
  - Two 6-inch Drive Cylinders (one with integrated position sensor)
  - Tie beam
  - Baseplate
  - Hydraulic hoses inside secondary for operating Drive Cylinders
- Hydraulic pump (outside secondary containment)
  - Pump, motor, reservoir
  - Proportional, directional control valve
  - Hydraulic hoses between pump & secondary containment
  - Motor controller
  - Variable voltage transformer for U.S. and European operation
- Hydraulic fluid (Quintalubric 888)
- Integration of system components
- System testing without Hg
System Testing

- Syringe vendor must demonstrate system operation in prototypic configuration
  - Eject/intake fluid from same port
  - Gravity-fed inlet with check valve
  - Simulate piping/nozzle pressure drops

- Must demonstrate
  - Variable flow control
  - Sensor operation
  - External computer control
Status

• Comments from reviewers incorporated into procurement specification
• Discussions in progress with three potential vendors
• Procurement specification to BNL next week