



Sao Paulo Linac Project

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March 21-24 2005

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*A U.S. Department of Energy
Office of Science Laboratory
Operated by The University of Chicago*



Sao Paulo Linac Project

- **Mission Statement: to assess the status of the project, meet the personnel on the project; plan a schedule for the linac assembly**
- **Assess the personnel talent**
 - understand their skills
 - ask them what they perceive their rolls are
 - ask them what they think the progress for their system should be
- **Inventory the equipment and parts for the accelerator**
 - beam diagnostics
 - control system
 - cryostats
 - documentation for the beam optics calculations
 - helium plant and plumbing
 - instrumentation
 - LN 2 plant and plumbing
 - master Oscillator distribution system
 - pre-buncher system
 - rf controls
 - solenoids
 - super-buncher
 - vacuum systems
- **Plan the assembly of the pre-buncher; super-buncher system and all related plumbing, diagnostics and control systems**
- **Close out meeting to discuss the planned schedule**
 - timeline
 - further training of USP personnel at ANL
 - future visits from ANL personnel



Sao Paulo Linac Project

- **Assess the personnel talent**
 - The staff is capable
 - Need direction
- **Inventory the equipment and parts for the accelerator**
 - Large capital investment to this point
 - Excellent facilities
 - Many areas where parts are needed
 - *Purchase*
 - *Fabrication*
 - *Cryogenics plants must be completed*
 - Input from Argonne is certainly available if necessary



Super-buncher Assembly Plan

- **Super-Buncher Cryostat Fabrication List**
 - Cable Manifold Ring
 - Cable Manifold Top plate
 - VCX- LN2 modified conflat flange for an indium seal
 - Resonator Flange blank off with indium seal
 - Vacuum space relief valve
 - Liquid helium supply line
 - Main Shield pump out baffle
 - Fast Tuner
 - Slow Tuner



Super-buncher assembly plan

- **Super-Buncher Cryostat Initial Cold Test**

- Blank off VCX LN2 port
- Install LN2 electrical feed thru
- Install resonator copper heat exchange flange
- Blank off resonator helium port
- Install thermocouples on helium tank; top LN2 shield
- Weld on valves for LN2 pre-cool inlet/outlet
- Install Main shield pump out baffle
- Mount main shield
- Mount outer vessel
- Blank off beam ports (conflat flanges)
- Install ion gauge
- Mount turbo pump gate valve
- Mount turbo pump
- Pump out cryostat
- Cool main shield by batch fill
- Cool pre-cool lines
- Leak check with everything at 77k



Super-buncher assembly plan

- **Super-Buncher Cryostat Assembly Tasks**
 - Remove outer vessel
 - Remove Main Shield
 - Complete helium supply installation
 - Install LN2 level sensors
 - Install LN2 feed lines
 - Install all RF and instrumentation cables
 - Install fast tuner with LN2 plumbing and Bias cable
 - Tune resonator frequency
 - Install Resonator
 - Install Driveline
 - Install pick up cable
 - Install slow tuner line
 - Test RF connections
 - Set Fast Tuner window
 - Install Main Shield
 - Install Outer vessel
 - Pump Out
 - Leak Check
 - Cool main Shield
 - Pre-cool resonator
 - Leak Check
 - Cool to 4.5k
 - Test



Sao Paulo Linac Project

- **Recommendations**

- Money
- Project Manager
 - *direct the team*
 - *responsible for inventory*
 - parts purchasing
 - fabrication
 - equipment
 - *liaison with Argonne for information and assistance*
- Project Team
 - *sole responsibility is constructing the linac*
 - *report all parts deficiencies to Project Manager*
 - *become system experts in their field*
 - *train others*

