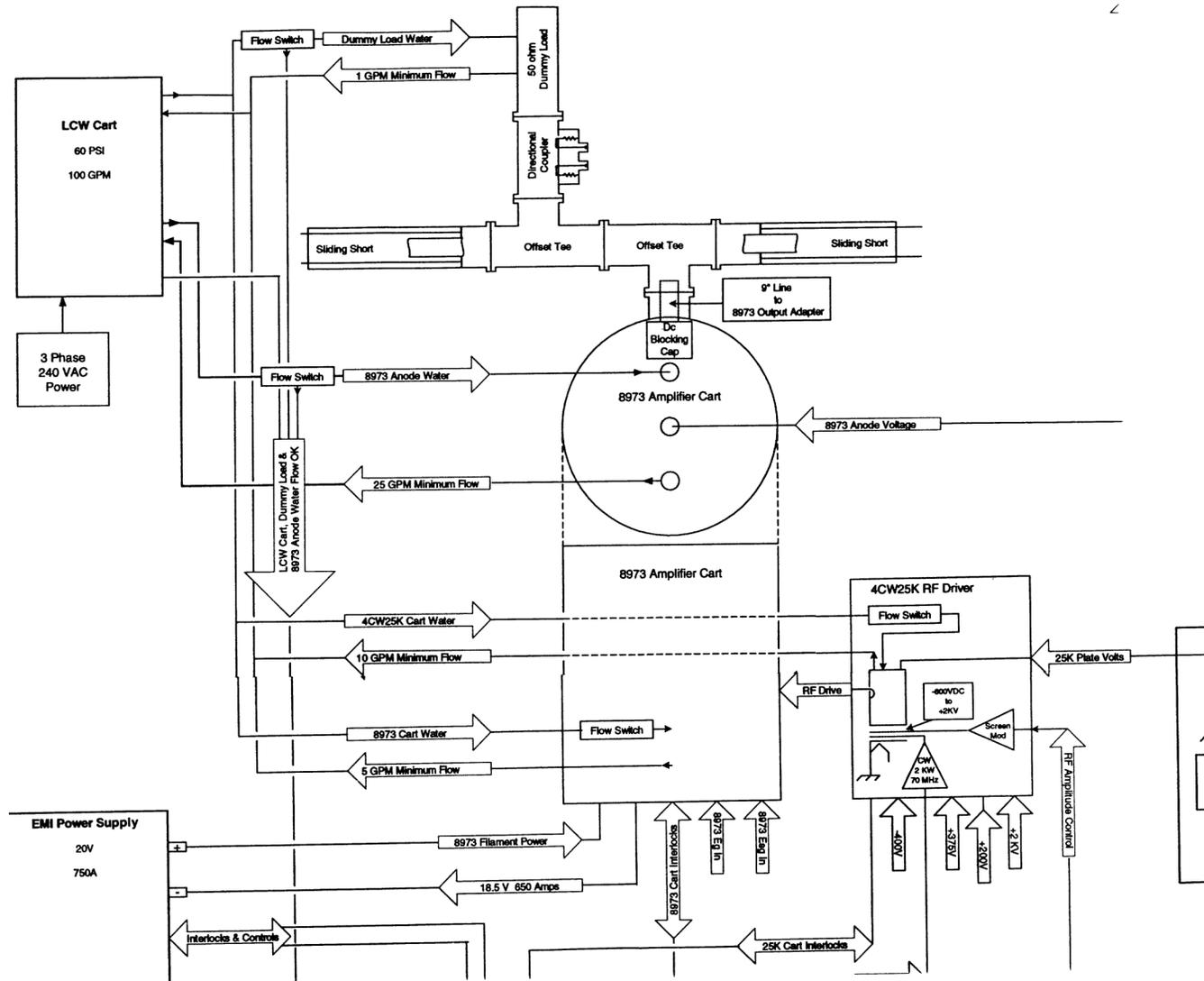




70 MHz RF amplifier  
re-commissioning update  
August 9, 2000

John Corlett

# Block diagram



# Controls, PSUP, interlocks racks



# Controls, PSUP, interlocks racks



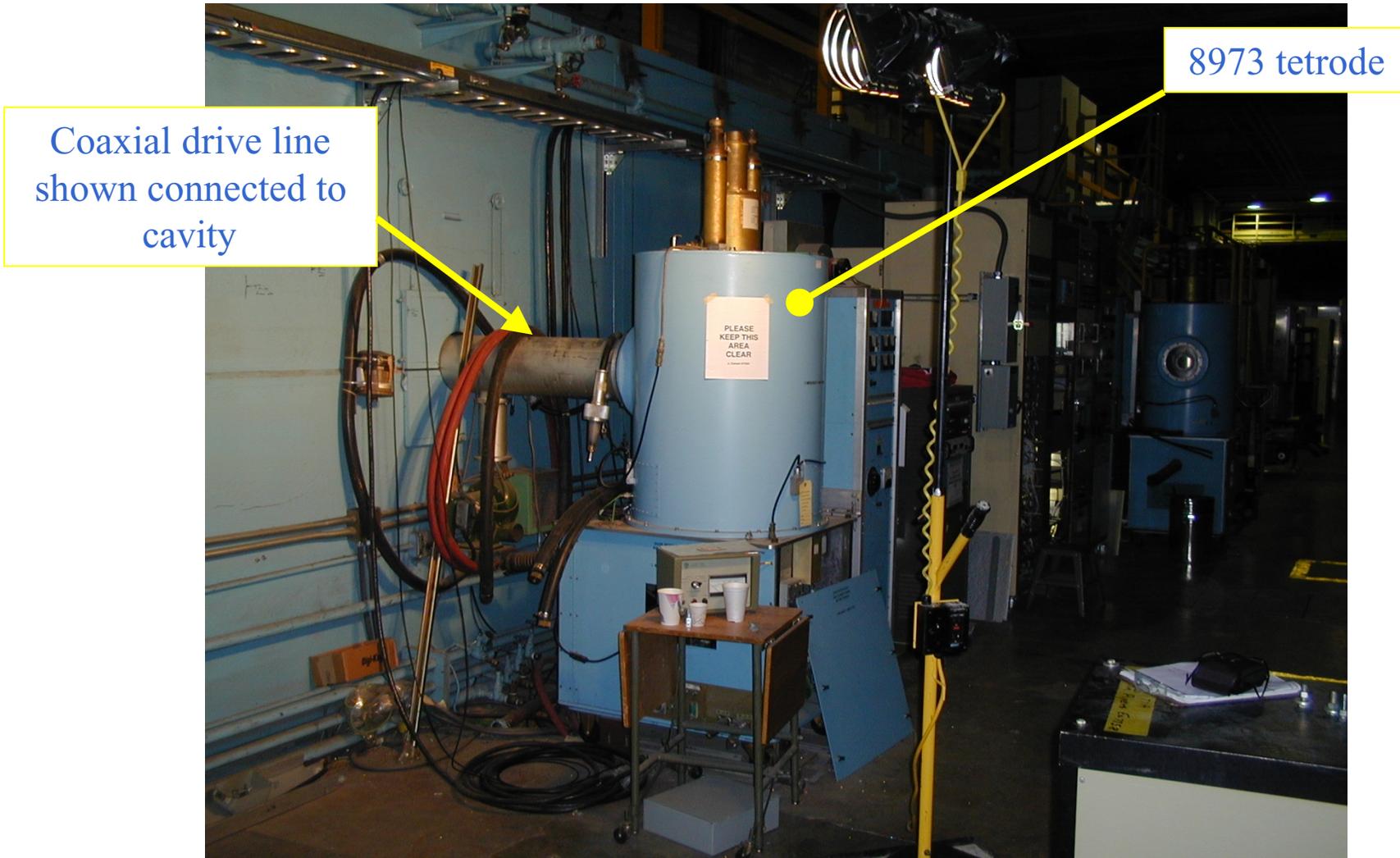
Rack housing  
controls, power  
supplies, interlocks

# Capacitor bank

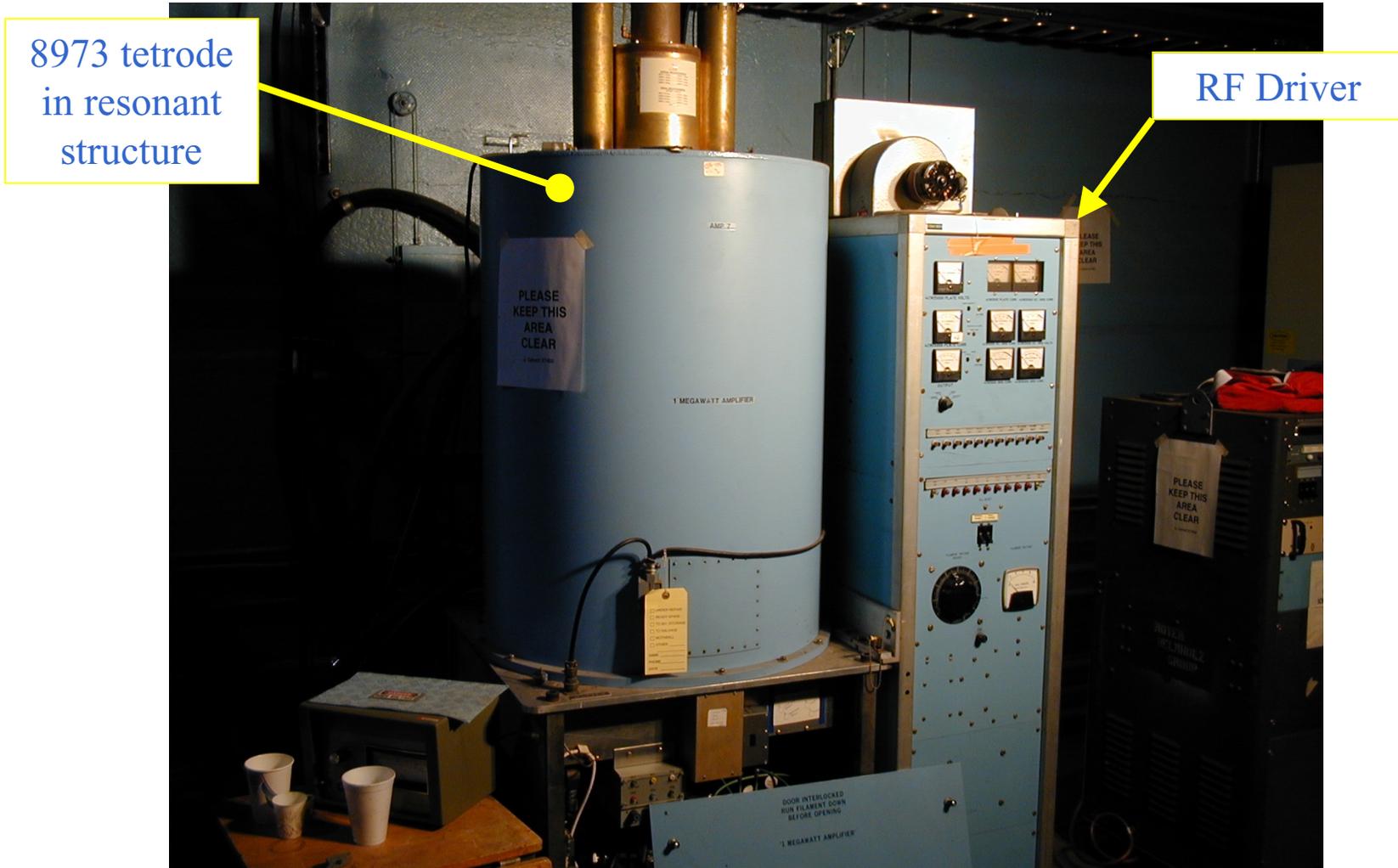


thyratrons

# Tetrode tank



# Tetrode and driver



# Work area



Install  
water cart, Tee-junction, sliding shorts, directional  
coupler, resistive load, support structure



# Coax hardware specifications



## Dummy Load

### ◇ Performance Specifications:

Impedance	50 Ohms
Operating Frequency	30 — 200 MHz
VSWR, full operating band	1.15:1 max
Peak Power Rating	$2.5 \times 10^6$ watts
Average Power Rating, continuous	$7.5 \times 10^3$ watts
RF Leakage	1.0 mw/cm <sup>2</sup> max. Measured at 1 during full power operation

Altronic  
Research  
Inc.

- § Load to be fully portable.
- § Water cooled.
- § Load to be interlocked in the form of contact closures, to indicate excessive dissipation and thermal overload.
- § Ambient operating conditions, 75 +/- 5 degrees Fahrenheit at sea level.
- § Input high-power RF connector to be female compatible with Myat, In standard 9 3/16" flanges and center conductors.



# Coax hardware specifications



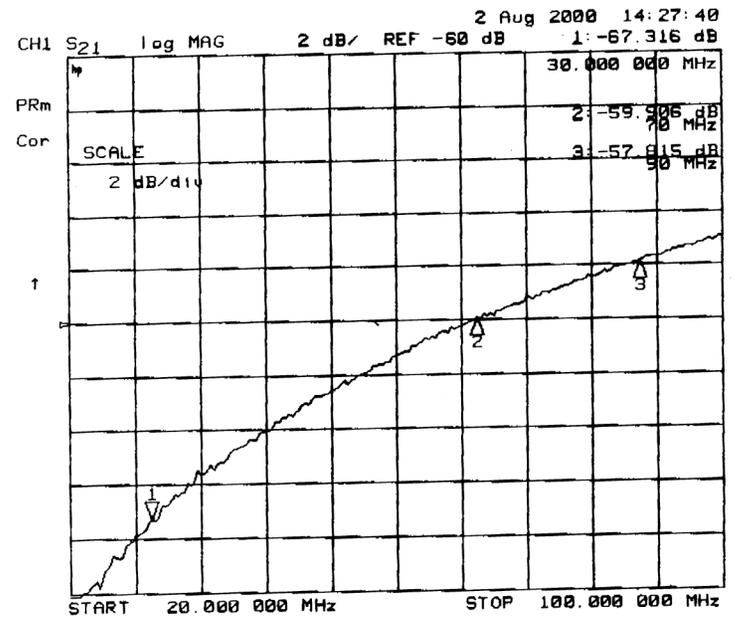
## Directional Coupler

### ◇ Performance Specifications:

Impedance	50 Ohms
Operating Frequency	30 — 90 MHz
Peak Power Rating	2.5x10 <sup>6</sup> watts
Average Power Rating, continuous	7.5x10 <sup>3</sup> watts
Directional Coupler Attenuation	60 dB, incident and reflected
Coupling tolerance	- 4.5 dB over full operating band - 0.1 dB at 70 MHz
Directional Coupler Directivity	25 dB min. incident and reflected
RF Leakage	1.0 mw/cm <sup>2</sup> max. Measured at 1 during full power operation

§ High-power RF connectors to be female compatible with Myat, Inc. standard 9 3/16" flanges and center conductors.

Connecticut  
Microwave  
Corporation





# Coax hardware specifications



## Stub Tuner

Myat Inc.

### ◇ Performance Specifications:

Impedance	50 Ohms
Peak Power Rating	$2.5 \times 10^6$ watts
Average Power Rating, continuous	$7.5 \times 10^3$ watts
RF Leakage	1.0 mw/cm <sup>2</sup> max. Measured at 1 during full power operation

§ High-power RF connectors to be male with removable male bullets, compatible with Myat, Inc. standard 9 3/16" flanges and center conductors.

§ Adapter connector to be included to mate the load input to the non-standard LBL designed coaxial line amplifier output. All required drawings to design stated adapter would be supplied..



# Schedule



- Rack electrical inspection  
08/11/00
- Coaxial hardware deliveries begin 08/08/00
  - Tee-junction
  - Sliding shorts
  - Directional coupler
  - Water-cooled resistive load
    - Delivery 09/15/00
      - Critical path
- Conditioned water supply
  - Delivery 08/28/00
- Modify blocking capacitor connection to center conductor
- Build supports
- Assemble coaxial hardware complete 09/22/00
- Power tests begin end of September
  - If dummy load not available, test circuits at low-power into cavity
- Try 71.3 MHz
- MOU needed
  - Transfer of equipment LBNL - BNL

Delivery imminent

