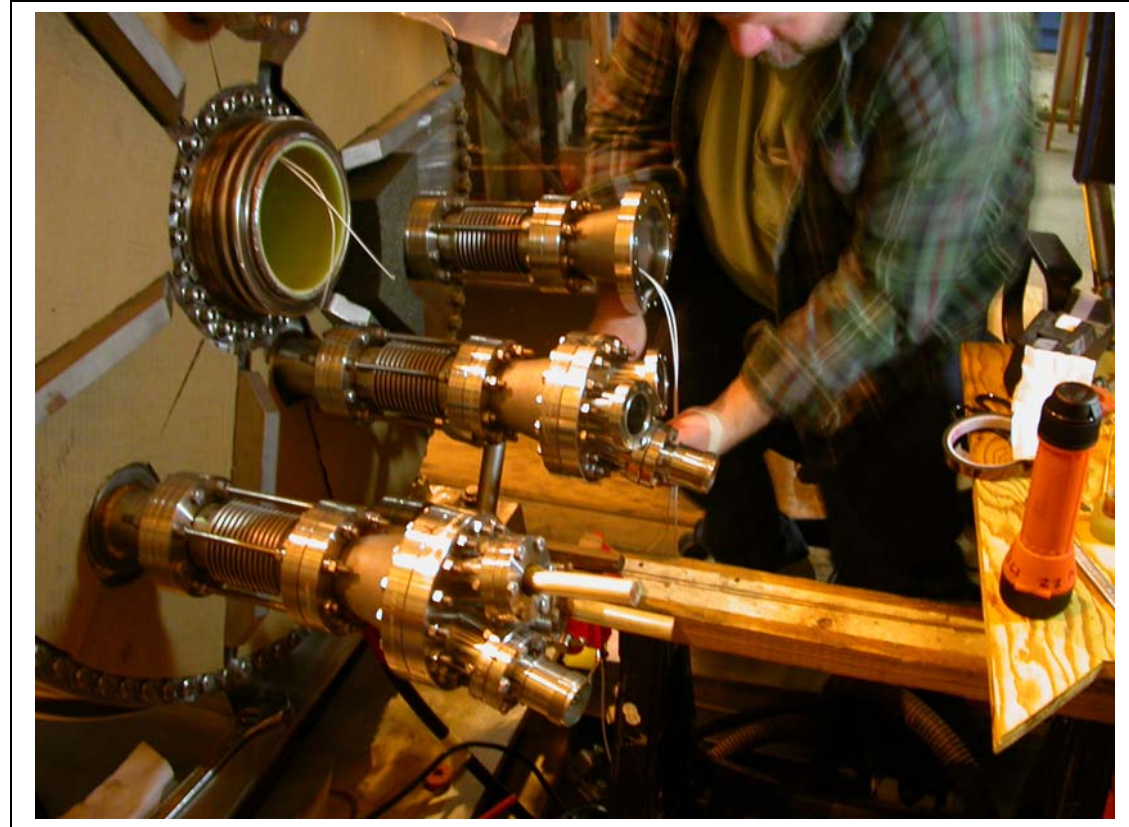
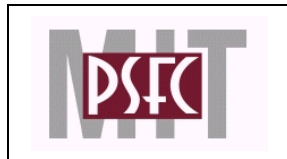


MERIT Magnet Testing Status

Wednesday March 8 2006 VRVS



**Peter H. Titus, MIT
Plasma Science and
Fusion Center**
(617) 253 1344,
titus@psfc.mit.edu,
<http://www.psfc.mit.edu/people/titus>



Status:

-Still assembling things

PLC cooling water interlock logic bypassed, Power supply control system qualified for low current tests

Bus Bar connections still being assembled – Bent bar has been received. – Will be clamped up today

Vacuum jacket pressure hasn't been checked but it is believed to be stable.

Vent pipe components are cut, many are welded. Roof sleeve has been installed.

Cryogenic lines have been run.

We are about to conduct low current tests connected to the large power supply

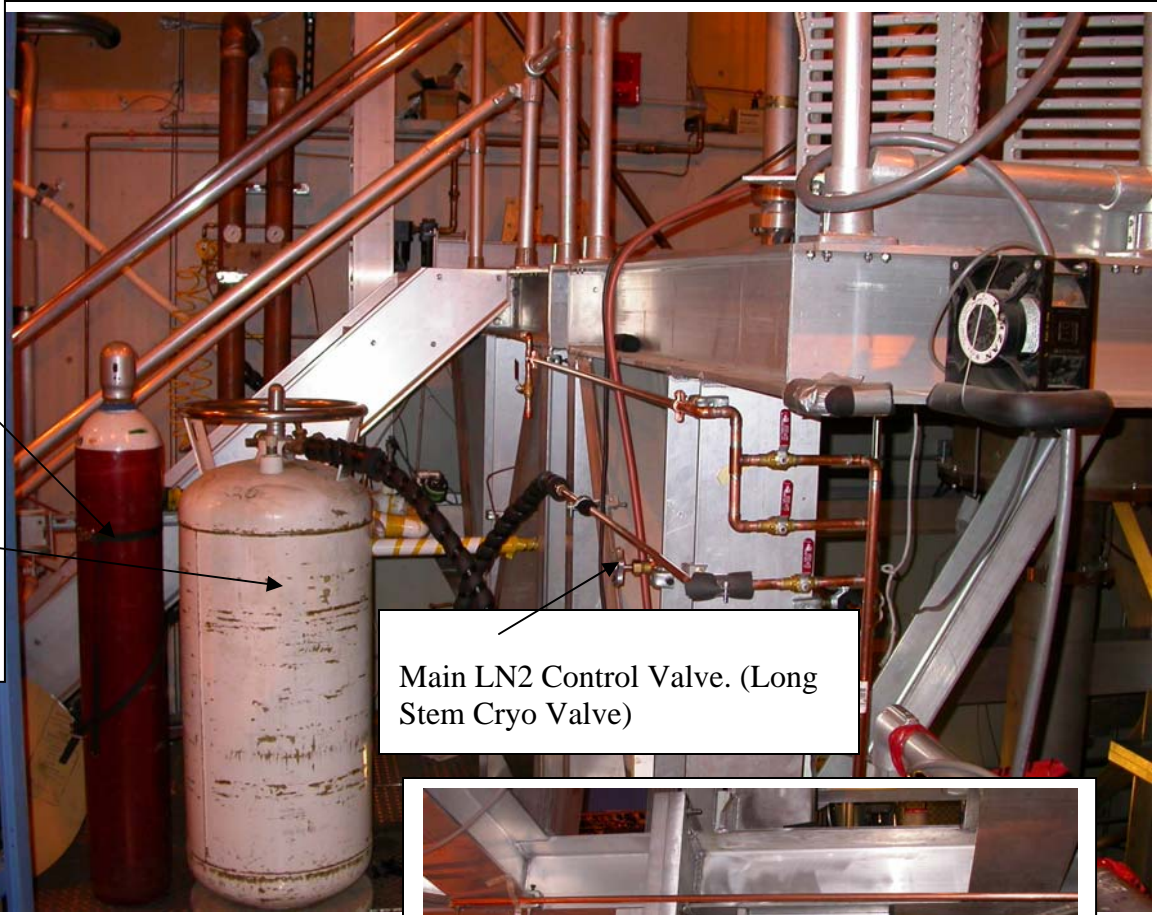
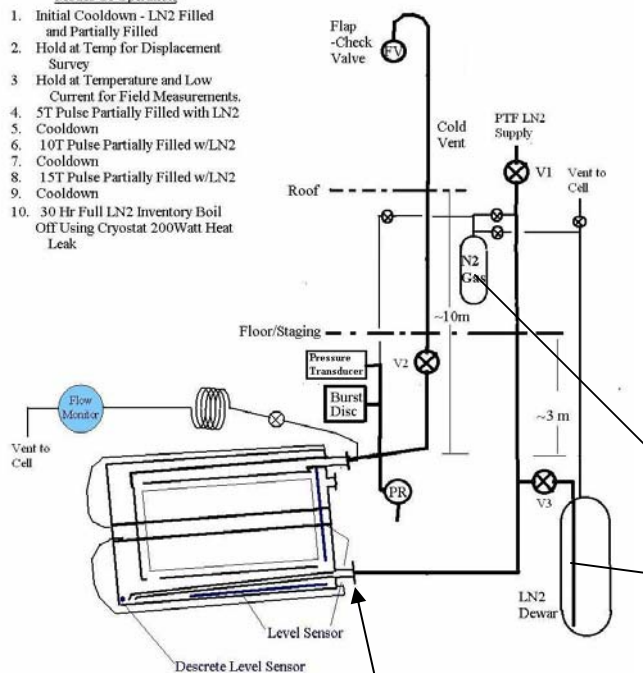


Peter Titus and Dave Tracey inspecting terminal ends of the MERIT Pulsed Magnet –In PTF Facility at MIT-PSFC

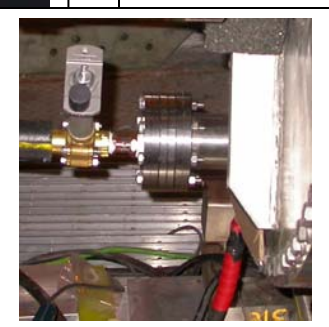
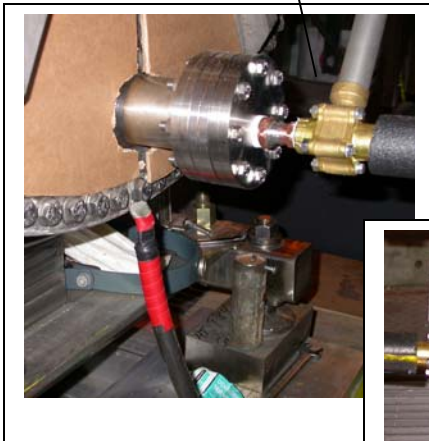
Cryogenic System – Connection to the magnet is complete, Some gas lines not connected yet. Cold lines are mostly insulated.

Modes Of Operation

1. Initial Cooldown - LN2 Filled and Partially Filled
2. Hold at Temp for Displacement Survey
3. Hold at Temperature and Low Current for Field Measurements.
4. 5T Pulse Partially Filled with LN2
5. Cooldown
6. 10T Pulse Partially Filled w/LN2
7. Cooldown
8. 15T Pulse Partially Filled w/LN2
9. Cooldown
10. 30 Hr Full LN2 Inventory Boil Off Using Cryostat 200Watt Heat Leak

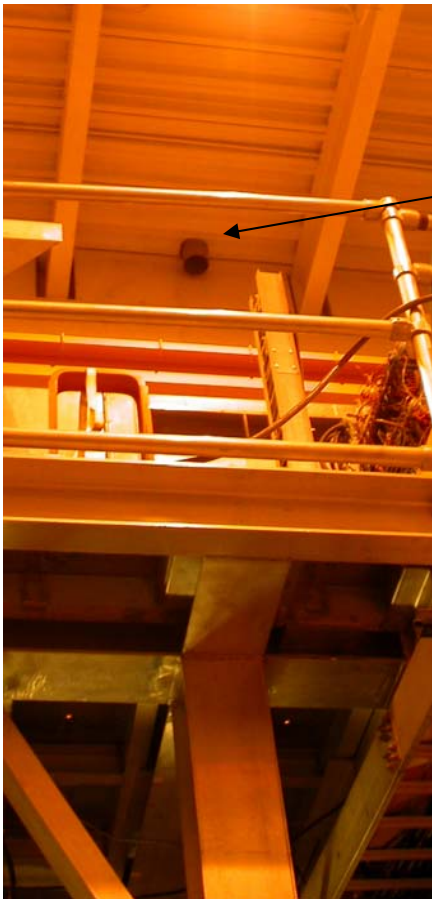


Main LN2 Control Valve. (Long Stem Cryo Valve)



Gas Lines and N2 Gas Volume Measuring Line

Nitrogen Vent Status – Getting close to being hung



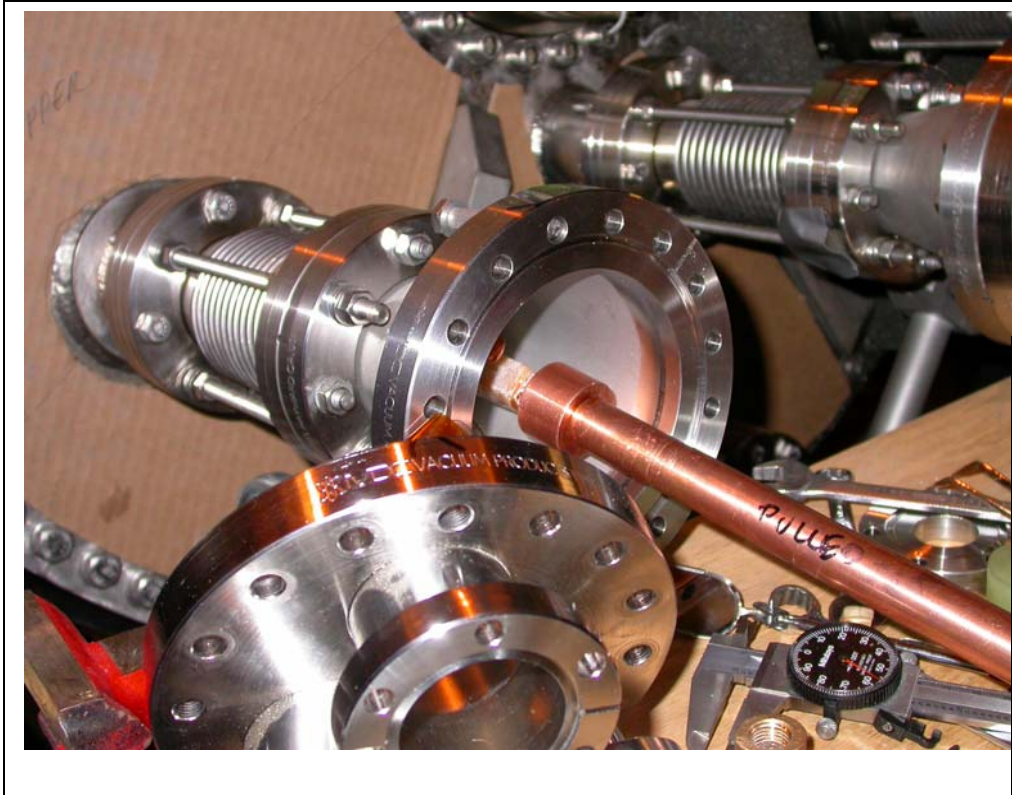
Roofers have installed the sleeve

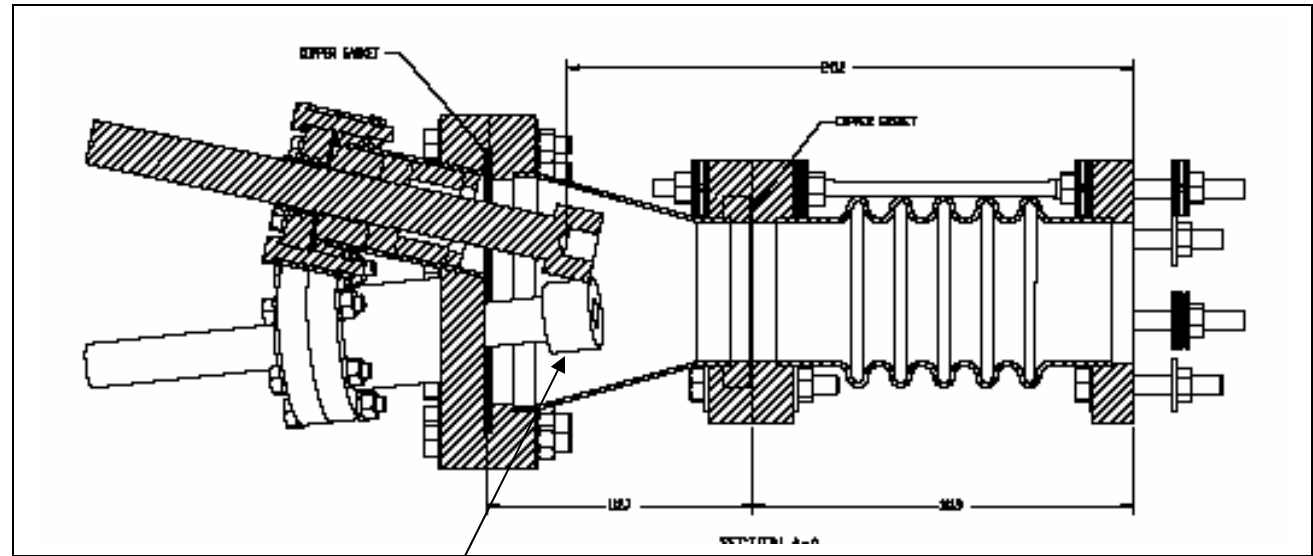


Armaflex Insulation

Work on the Terminals has slowed Progress a couple of Days.

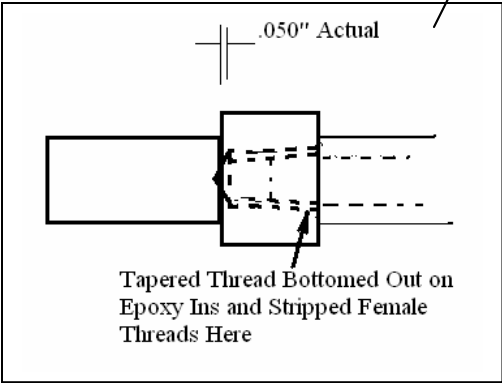
I – Peter Titus – stripped the thread of one of the copper bar extensions while attempting to tighten it. We decided to inspect and re-work all threaded connections s needed.





Terminal bars need re-work for low current tests and replacement for high current tests

Ends will be wrapped in Kapton due to proximity of the female threaded sections and all threads are being brush silver plated.



8.8

2.25

1.50

1.00

63°

0.75

1.00

1.00

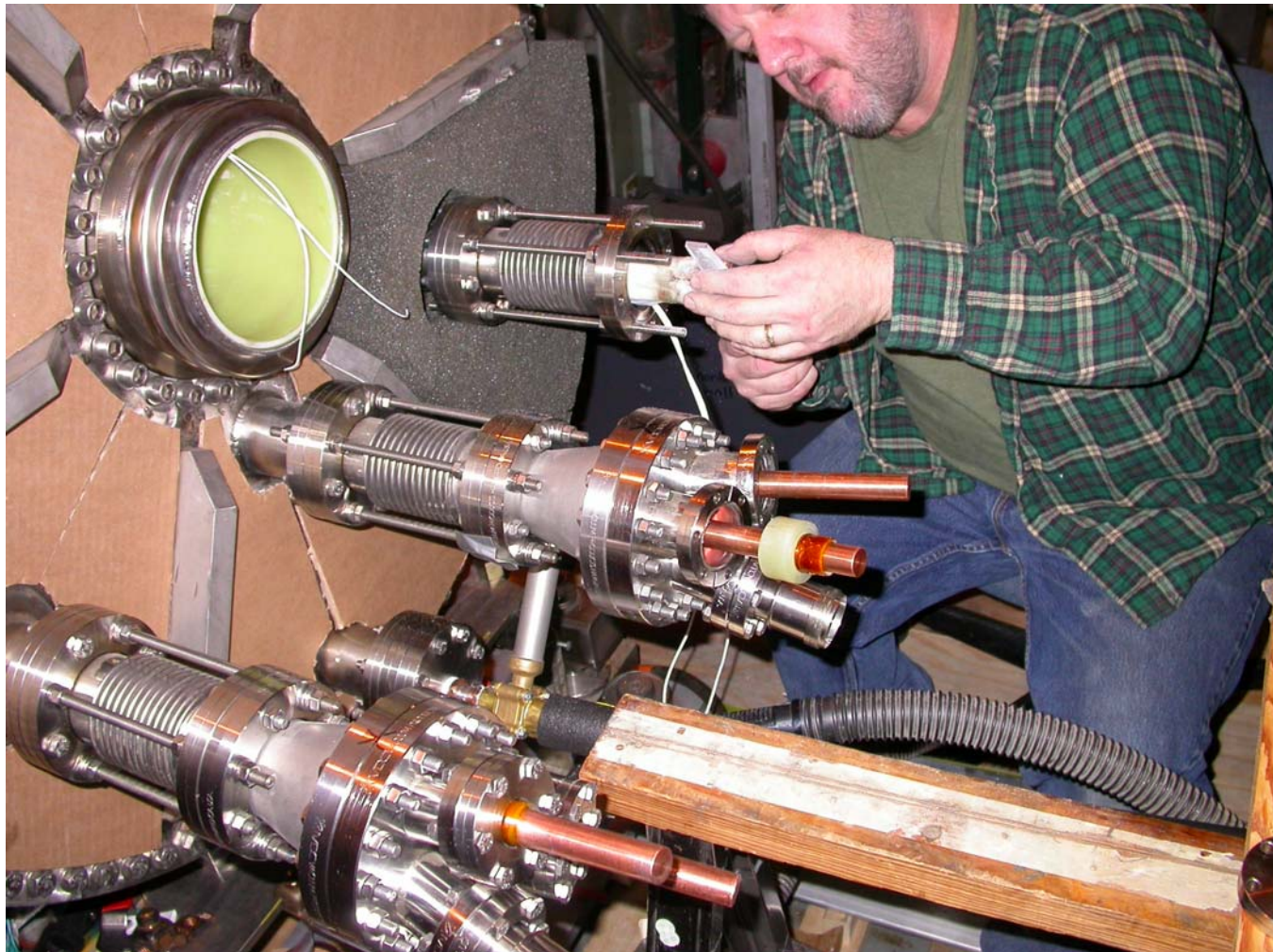
1/4 NPT

MATERIAL: COPPER

UNLESS OTHERWISE SPECIFIED	
FRACTIONS ±	1/32"
.X ±	.020"
.XX ±	.010"
.XXX ±	.005"
ANGLES ±	2°

FILE NAME	C:\vd\101\Lead sketch.dwg		
CONTRACT NO	-		
DRAWN	03/03/2006 Fishman		
CHECK			
APPR.			
ISSUED			
SIZE	FSCM NO	DWG NO	REV
B	-	-	0
SCALE	1'0"=1'0"	WEIGHT	SHEET

PSFC.MIT
LEAD

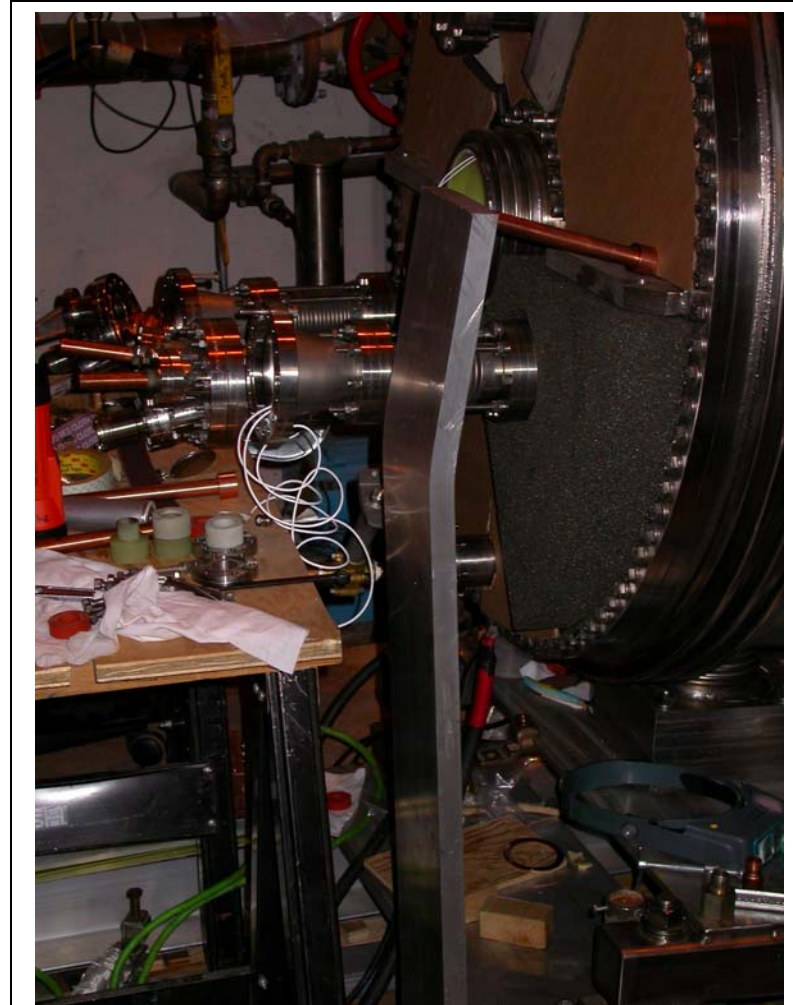


Dave is filing the corners off the end of the threaded portion of the square conductor to allow tightening of the copper bar extensions on the conductor $\frac{1}{4}$ NPT thread

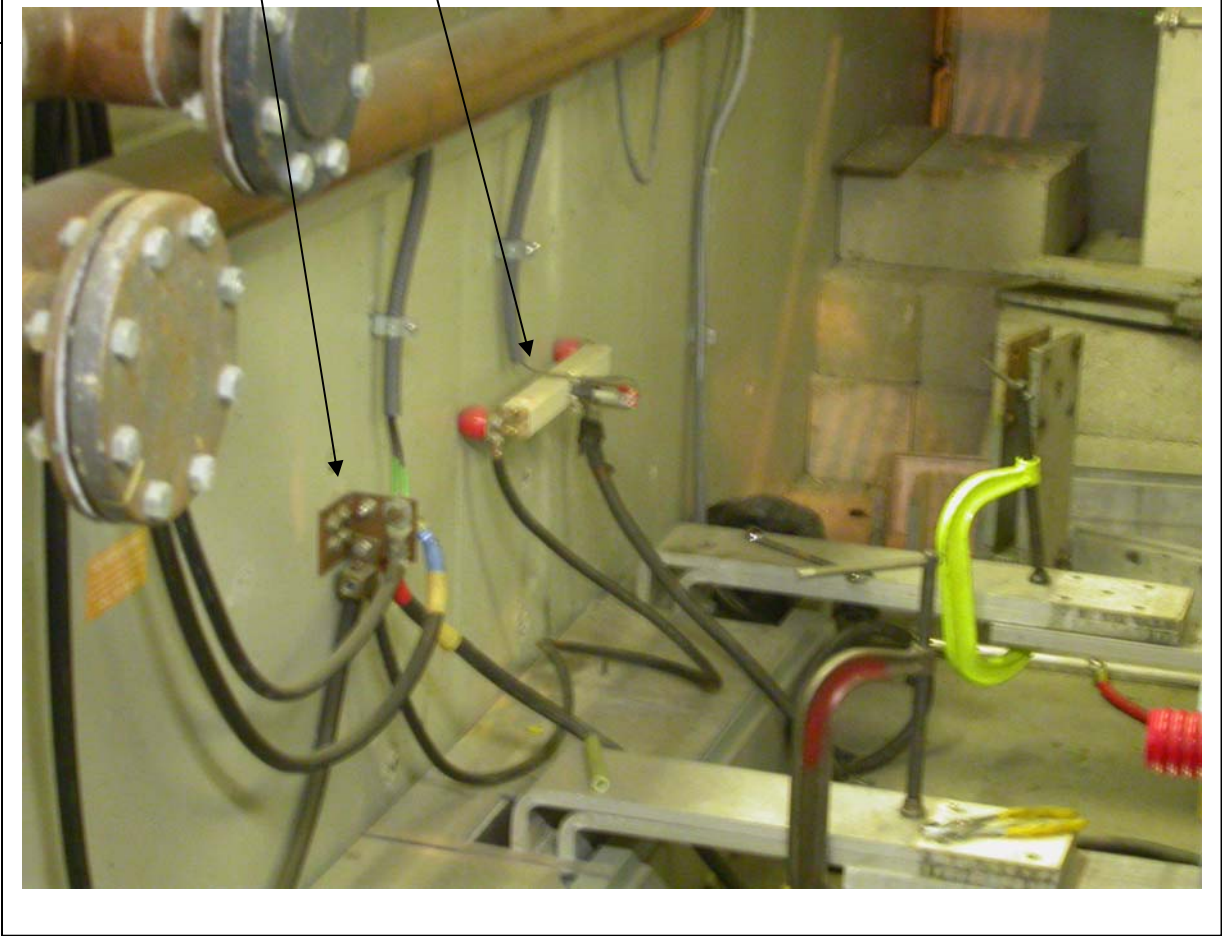
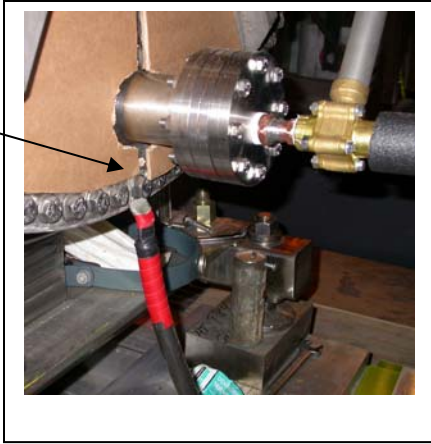
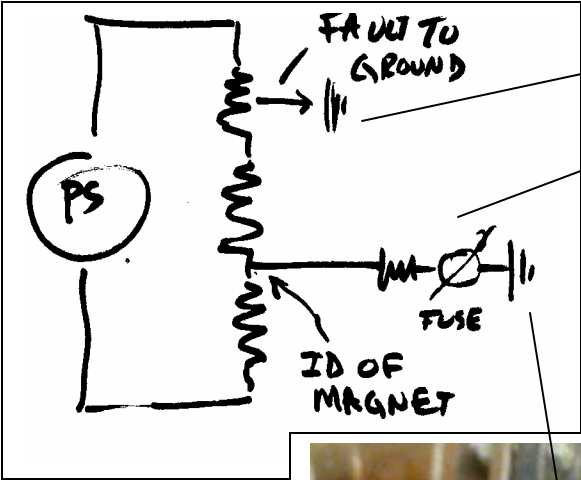
Bus Bar Connections



Brush plated terminal Blocks



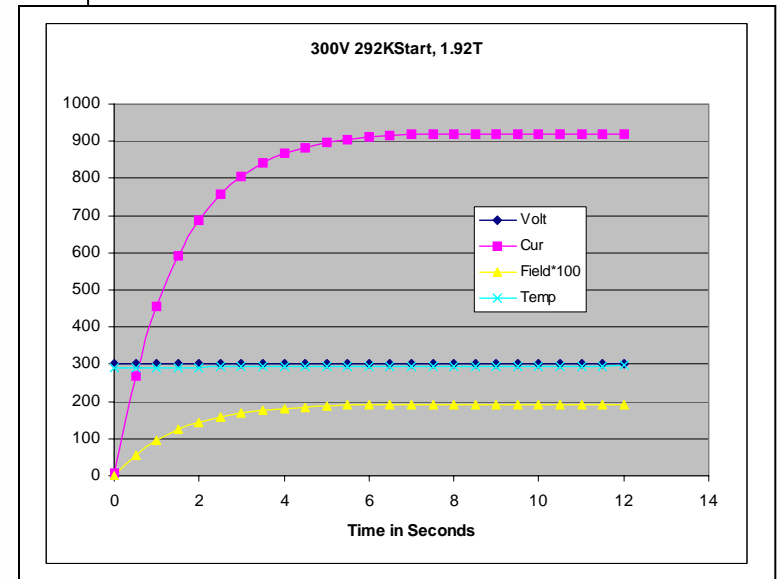
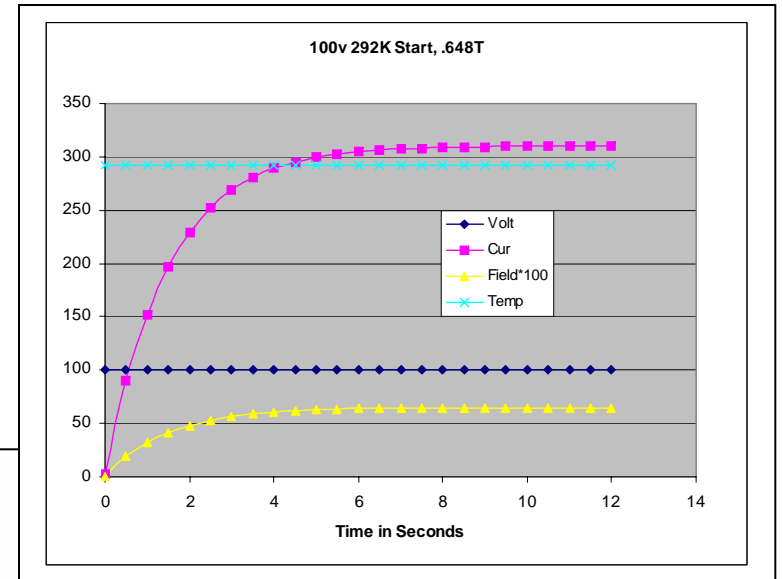
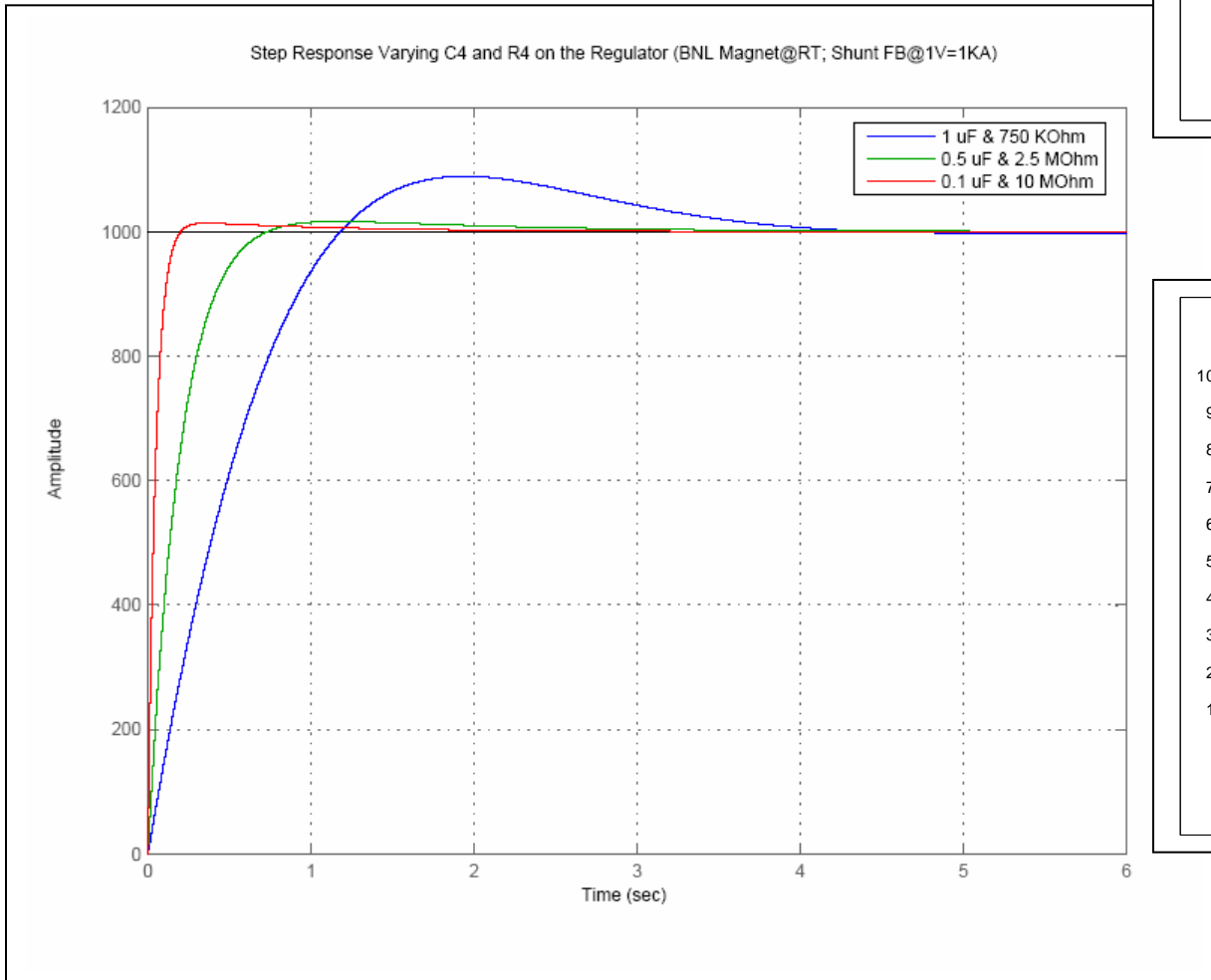
Bent Vertical Bus Bars have been received from Ramsey Welding



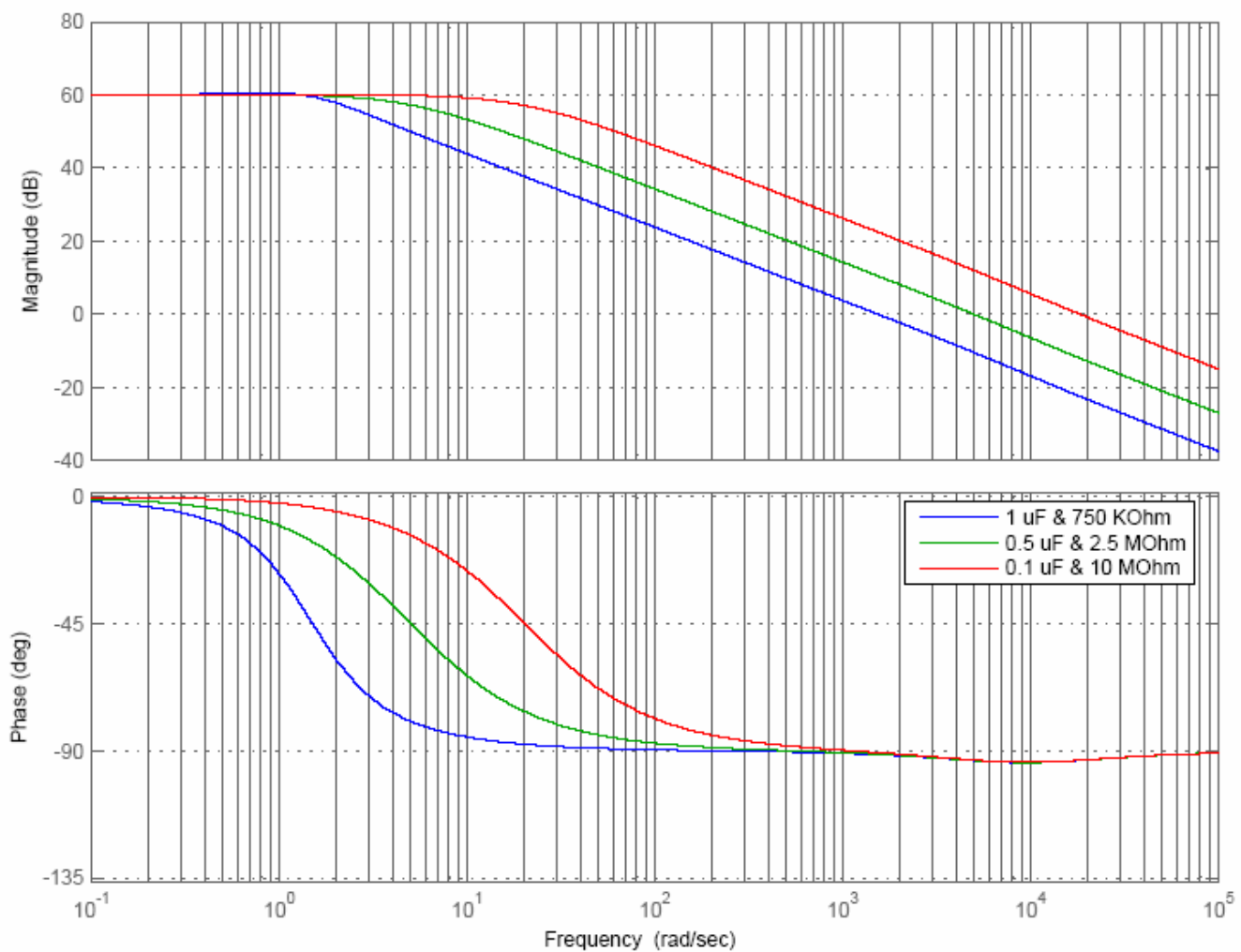
Phil,

Attached are the step and bode plot responses for the BNL magnet at room temperature with the feedback changed to $1V = 1\text{ KA}$. Basically, for the room temperature tests at the current transformer taps, the simulation shows that the integrator R and C values can remain 750 kOhms and $1\text{ }\mu\text{F}$.

Gary L. Dekow, Operations & Engineering Coordinator,
Plasma Science and Fusion Center, MIT.



Bode Plot with Varying C4 and R4 on the Regulator (BNL Magnet@RT; Shunt FB@1V=1KA)



Bore As-Builts

