

## ANNEALING TARGET

## Assumptions:

Fridge running - all pumps on

## Prepare NMR:

Stop beam, if necessary  
Turn off Microwaves, if necessary  
Put NMR into Monitor Mode

## Prepare Fridge:

Stop Roots Blower 3 by pressing the RB3 Stop Button (in electronics room)  
Wait 2 minutes for pump to spin down  
Stop Roots Blower 2 by pressing the RB2 Stop Button (in electronics room)  
Wait 2 minutes for pump to spin down  
Stop Roots Blower 1 by pressing the RB1 Stop Button (in electronics room)  
Open Main Gate Valve, PV91141, if necessary (in electronics room)  
Close Bypass RB3 Valve, PV91142, if necessary (in electronics room)  
Close Roughing Valve, PV91143, if necessary (in electronics room)  
Place Run Valve, EV91120, into Manual Mode (cryo computer)  
Close Run Valve by entering a manual setpoint of zero  
Close Bypass Valve, EV91121, if necessary, by entering a position of zero  
Put the Separator Valve, EV91127, into Computer Control (not Manual Mode)  
Enter a value of 60 into the Set Val box of the EV91127 control

## Empty the Tail of Helium:

DO NOT move the target without first informing MCC - you'll trip all Halls  
Move the target to the Top position, write in logbook  
Load the Anneal program (icon on desktop)  
Run the Anneal program (click white arrow on left of toolbar)  
Type in a setpoint of 60 (K) and hit "Send to ITC", write in logbook  
Hit the "Goto Setpoint" button to turn on the heater  
Observe the liquid level in the tail drop (7% is about the minimum reading)  
Wait 5 minutes after the liquid is gone  
Open the Run Valve to 0.3, write in logbook  
Move the target to Empty position, write in logbook  
(If Run Plan needs to do Carbon runs, this position is also OK)  
Use Lower camera to see the He4 pressure (Rack B, Device 5), write in logbook

## Begin the Anneal:

Wait until all three sensors stabilize at 60K, write in logbook  
Type the desired Anneal temperature into the setpoint, Hit "Send to ITC"  
Note in the logbook the time when the anneal temperature is reached  
Log Top Platinum, Top T/C, Bottom T/C, and He4 Pressure every 5-10 minutes  
Leave the target at the Anneal temperature for the desired number of minutes  
To stop the anneal, hit the "Stop Anneal" button, write in logbook  
Let the anneal program continue to run, to document the cooldown process

## Cool Down the Refrigerator:

Change the setpoint of the Bypass Valve to 1.0  
Change the Manual setpoint of the Run Valve to 1.0  
Wait until the Nose Level, LL91112, reaches about 80%  
Change the setpoint of the Bypass Valve to 0.0  
Change the Run Valve back to computer control (not Manual Mode)  
Enter a value of 32 into the Set Val box of the EV91127 (Separator) control  
Hit the Stop button on the toolbar of the Anneal Program, and then close it  
Wait for the Nose Level to (mostly) stabilize  
Observe the He4 pressure  
If the pressure is not below 12 torr, temporarily close the Run Valve  
Once the pressure is below 12 torr, start RB1 (electronics room)  
Wait for the pressure to drop below 2.2 torr  
Start RB2  
Wait for the pressure to drop below 1.0 torr  
Start RB3  
If necessary, re-open the Run Valve or put it under computer control