CHANGE TARGET POSITIONS

Assumptions:
- Beam on
- Target polarized & running normally
- NMR in Take Data mode

Procedure:
- DO NOT move target while beam is on - will trip entire accelerator!
- Have Shift Leader to call MCC and tell them:
  - Turn off beam
  - Mask target motion FSD (Fast Shut-Down) while we move the target

Change NMR to read new target:
- Write down final polarization of existing cell in logbook
- If moving to Carbon, Hole, or Empty cell, hit "Pause" button to stop NMR
- Skip to "Move Target Stick" if moving to Carbon, Hole, or Empty target
- Select new NMR channel from drop-down box (Top Deuteron or Bottom Deuteron)
- Hit "Take Data" if necessary
- Wait until current NMR measurement is complete - channel will then change
- Click the run arrow on the "Yale DC Convert" program a couple of times
- Ignore the first signal returned after doing a DC conversion
- Check that the left side of the following signal starts at y=0
- If necessary, repeat DC conversion until y=0 condition is satisfied

Move target stick:
- Check with Shift Leader that beam is indeed off
- Click the "Move Target" button on bottom right of NMR display
- Click and hold the "Move Table Up" or "Move Table Down" button
- Watch the green indicator lights to determine where target table is
- When light for the desired new position lights, you are close
- Target position is most accurately determined by the Target Encoder
- Move table until Encoder is +/- 0.01 of number listed next to green light
- When table is properly positioned, hit the "Done" button
- Wait 10-15 seconds for computer to write new position to EPICS
- Write down new position and encoder value in logbook

Change Microwaves:
- DO NOT change microwave switch with microwaves on - can damage $70k tube!
- Hit "Transmit/Standby" button (Electronics Room) to turn Microwaves off
- Set Microwave Switch to send power to new target position
- Hit the "Transmit/Standby" button to turn microwaves back on
- If polarizing new cell in opposite direction as the old one:
  - Look up frequency for new direction on while board
  - Use Upper camera (Monitor #8) to view the frequency (Rack A, Device 3)
  - Use "Up Frequency/Down Frequency" switch to change to desired frequency
- Keep beam off while building polarization
- Adjust microwaves to optimize polarization (see "Tips for Polarizing")
- When polarization nears a maximum, target is ready for beam