HIRES POWER UP / SHUTDOWN PROCEDURES FOR CCD CONTROLLER

Powering down:

1. Make sure you have topped off the 3.8 liter dewar.
2. rlogin to hccdvmep or telnet into the CCD crate from lehoula:

lehoula> telnet k1consoles 2009

Issue the command:

shutdown

3. Once the shutdown command finishes it will tell you its okay to power down the controller. The black rocker switch accessible by taking off the side panel of the footlocker will power down just the controller. Once that is done you can power down the whole footlocker if need be by unplugging it.

Powering up.

Powering up is a little more complicated and there seem to be some issues we don't understand yet. Its possible that once powered down, the footlocker should stay powered down a little while before being plugged back in. The same may be true for the controller but all of this is conjecture at this point. Once ready to power up:

1. Power up footlocker if not already powered.

2. Toggle the controller rocker switch. If following a footlocker power up, wait at least a few minutes first (?).

3. During the controller restart a lot of stuff goes streaming past and an error condition could be included. To capture all that issue the command on lehoula:

script hires_powerup.log

4. rlogin hccdvmep (from same xterm as step 3)

5. Confirm a clean power up by testing response from VME fiber interface board:

tdl 0,1

Should get a result that looks like this:

```
-> tdl 0,1
msg = 0X103 0X54444c 0Xffffff
reply = 0X10002 0Xffffff
reply =      0X10002 0Xffffff
value = 0 = 0x0
```

Assuming that looks good, check communication with the timing board next:

tdl 0,2

should return a similar response if you are able to communicate with the timing board in the CCD Controller. If it doesn't work the first time, try doing a "tdl 0,2" several more times, since sometimes we get garbage characters in the FIFO when the system powers up.

     tdl 0,3

should return a similar response if you are able to communicate with the utility board in the CCD controller. Every once in a while, the utility board does not power up cleanly. If you are unable to get a correct response from "tdl 0,3" after several tries, then turn the CCD controller off, wait 30 seconds, then start over again with the "tdl 0,1".

6 . Once you have obtained a "value = 0 = 0x0" response from all of the various tdl commands, then give the command

     get_ccd_dims(0)

this should also return a "value = 0 = 0x0" response.

7.   At this point, you should be ready to bring up analog power within the controller and the dewar. To do so, give the command:

     < restart

This will first confirm the integrity of the EEPROMS in the controller, and will then check all of the power supply voltages, clock voltages, and bias voltages, first with the analog switches to the dewar open, and then again with the switches closed. NOTE: one of the bias voltages for one of the amps of CCD #2, i.e., the amp that doesn't work properly, may report an out-of-spec voltage during the second phase of the power up diagnostics; that is normal.   Once I saw a report of a clock voltage out-of-spec. That was not normal. I tried again and it was fine.   The output from the restart command should conclude with the following messages:

 Closed clock voltages are all within tolerance Now commanding shutter closed
+5v readback raw ADC reading = 3431 volts= 5.057302 prior to clocking
+15v readback raw ADC reading = 3478 voltage = 15.882360 prior to clocking
-15v readback raw ADC reading = 624 voltage = -16.012955 prior to clocking
+30v readback raw ADC reading = 3277 volts = 34.482758 prior to clocking
Sending IDL command to TIMING board
CCD clocks are now running in idling mode value = 0 = 0x0

8. Once the power up diagnostics are completed, the CCD should be powered back up and the CCD clocks running.

9. The last step is to start back up the various monitor tasks, and you won't get a valid readout of the dewar temperature until you do. You need to decide whether or not you want to start up the dewar_fill task at this time, or whether you initially want the dewar fills to be done manually.

9A. To start up all of the monitor tasks together (including the dewar_fill

task), use the command:

    < start_monitors

9B. OTHERWISE, if you decide you don't want to start up the dewar_fill
monitor just yet, then instead do:

    < broadcast

    < dewartemp

This will allow you to monitor the dewar temperature, but will not
start the dewar_fill task.

To start the dewar_fill task at a later point, use the command:

    < dewar_fill

10. Once you are finished starting things up on the crate, log out of
the crate and exit from the script session.