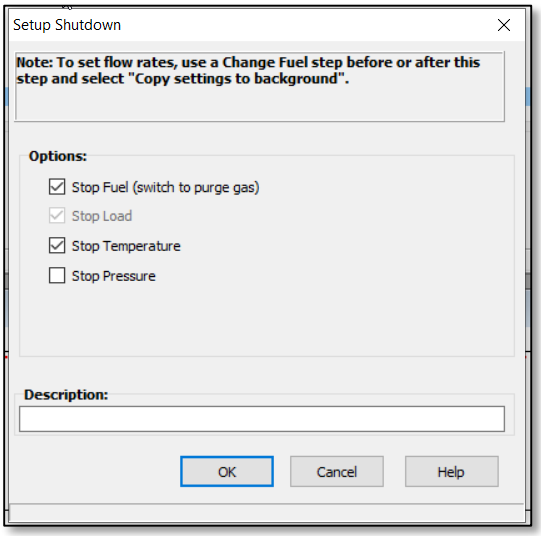
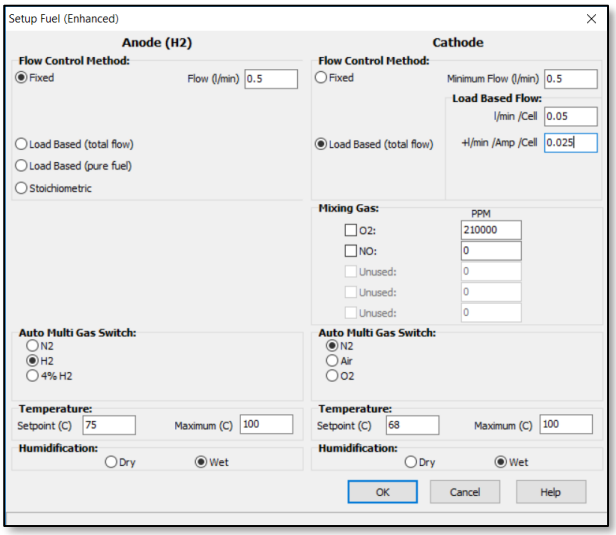
Q: My fuel cell test system will finish a sequence of experiments during the middle of the night (or weekend, or when I am in class, *etc.*) and I will not be there to shut it down. I would like to limit the amount of gas that is used after the experiment protocol has finished. I would also like the system to be purged when I return. After the test protocol is completed, is it possible to restrict the gas consumption, whether it be purge gas or reactant (H_2 and Air/O_2)? Is it possible to have the system also be purged?

A: The desired effect – to limit the amount of gas consumed during unattended operation of the test system and be purged and therefore in a "safe" state – can be achieved with a properly configured Shutdown Sequence, the steps of which are:

1. Shutdown Experiment – Turn OFF load, fuel (switch to purge) and temperature (optional)
2. Change Fuel Step – Sets fixed flows for the purge, *e.g.*, 0.5 SLM
3. Open Circuit Voltage Experiment – Sets the duration of the purge step, *e.g.*, 10-15 min
4. Change Fuel Step – Set flow to zero. Also, check the "Copy to Background" box so that the zero flows become the new background set point
5. Open Circuit Voltage Experiment – Use a very long duration (*e.g.*, 48 hr) so that it will still be running when you return to manually take over control of the system





If the system is running a list of experiment when an alarm occurs, the system will turn OFF the load, the fuel (switch to purge) and temperatures but will continue "run" the list of experiment list if you have unchecked the "All Alarms Stop Experiment List" in the Alarms tab of Instrument Configuration. If your experiment list includes a Shutdown Sequence similar to the above near the end of it then the flows will be set to zero.