

UIUC Control Console Installation and Upgrade

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The University of Illinois Nuclear Reactor Laboratory shutdown in March of 1993 to install the General Atomics digital control console. Two weeks of this period were devoted to refurbishment of the rod drives and two weeks were the actual installation of the console. Much of the wiring necessary to install the console was done during the period when the rod drives were being refurbished. A few mistakes were made along the way.

- A "repaired" extension cord was temporarily used to supply power to the DAC...the ground and neutral were reversed...this was not appreciated by the DAC! We had to replace a couple of the boards in the DAC after that little fiasco.
- The instrumentation cables for the rod drives were received with the plugs all connected and ready to install...except you can't put a two inch plug through a half inch conduit. We had to cut the plugs off, run the cable through the conduit, and then resolder the plugs on where the rod drive assembly connects (my privilege).
- We had to replace the memory board in the NM1000 in order to prevent it from losing its mind every time it got turned off.
- There were problems with the pulse data acquisition that were eventually traced to a problem in the ribbon cable between the mother and daughter boards.

All in all the installation and operation of the console went fairly well. There are still occasional glitches, but none serious or excessively annoying.

The console installation is part of an upgrade program to replace all of the instrumentation in the facility with the modern equivalent. The pressure and flow sensors, currently air operated, are being replaced with 4-20 ma transmitters for input into the control console and into a mimic board for the primary and secondary systems.

Through the funding of the now defunct, temporarily we hope, Reactor Instrumentation Program we have upgraded our area radiation monitors as well. These upgrades provide us with more reliable equipment as well as consolidating some equipment into less space. This is helping us remove some older cabinets from our control room to free up space.

Other upgrades that are in the works are replacement of the 8.5 wt/o fuel with 20 st/o fuel to allow for extended operation and removal of the lazy susan. The lazy susan space will be replaced with a grid system for sample holders similar to the Neutron Activation Tube.

Last, but not least, and totally unrelated to the console installation, the college has finally conceded to paint the inside of the Nuclear Reactor Laboratory for the first time in 34 years.