



crane maneuvers, and conduct training sessions for replacement of the CNS, according to ANSTO.

During the actual replacement, the old CNS device and its associated pipework were carefully lifted out of OPAL and placed inside a shielded device with the aid of remotely operated cameras—and without any direct technician interaction. The new eight-meter-tall CNS structure then had to be installed vertically with a required positioning accuracy of only a few millimeters, again with the use of remote cameras. After the new CNS was in place, pipes supplying helium, deuterium, and vacuum services were connected and tested.

The CNS upgrade will permit greater levels of scientific analysis. According to ACNS director Jamie Schulz, the replacement will boost the performance for eight of the center's 15 neutron beam instruments. "The neutrons produced by OPAL support our unique facility and scientific instruments, allowing



A technician works inside OPAL's reactor vessel during the maintenance and upgrade project. (Photo: ANSTO)

our researchers and industry partners to study the structure and dynamics of samples, such as molecules, polymers, proteins, and viruses," he said. ☒



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