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## **C1Po2C-06 [11]: Progress towards operation of a deuterium cold neutron source at the NCNR**

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The NIST Center for Neutron Research (NCNR) operates a 20 MW research reactor that produces neutrons for a suite of 30 neutron scattering instruments. 70% of these instruments use cold neutrons ( $E < 5$  meV), which are moderated by two separate cold neutron sources. The cold moderator for both sources is liquid hydrogen (LH<sub>2</sub>), which is in turn cooled by a recently commissioned 7 kW, 14K helium refrigerator. NCNR plans to replace the larger cold source with a new one operating with liquid deuterium (LD<sub>2</sub>). This report focuses on progress towards the upgrade to liquid deuterium, and options to address the particular challenges of designing and operating a cooling system that will simultaneously support operation with both LH<sub>2</sub> and LD<sub>2</sub> sources.

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