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Australian Nuclear Science and Technology Organisation

Media Release

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Nuclear reactor start-up: safety submission lodged

ANSTO¹ today lodged an application with the independent safety regulator (ARPANSA²) seeking approval to modify the reactor fuel design and to use the modified fuel design to restart operation of the nuclear research reactor OPAL.

OPAL has been shut down since late July when, during a routine monthly shutdown, some fuel plates contained within some fuel assemblies were found to have been displaced.

To address the problem, the design of the nuclear fuel has been changed to incorporate a stopper to prevent fuel plate movement.

The proposed design has been thoroughly tested and evaluated, including tests that exceeded conditions that would be experienced in the reactor.

To ensure the safety of the design modification, ANSTO has undertaken detailed risk assessments and technical analyses, in collaboration with the reactor designer, INVAP and drawing upon the advice of independent international experts.

If approval is given, operation of OPAL would recommence using a 'start-up' core specially manufactured to the new design. This fuel has been manufactured overseas and will be available in early January.

ANSTO places a high priority on nuclear safety, which has necessitated time-consuming but thorough examination, analysis and testing. During the removal of the fuel assemblies from the core, regulatory approvals also had to be obtained.

The shutdown has also enabled ANSTO to successfully complete repairs to the reflector vessel. The very small leaks between the heavy water in the vessel that surrounds the reactor core and the normal water in the reactor pool would gradually have affected the efficiency of neutron production over several years if not resolved.

The public can be reassured that there are no abnormal safety or radiation issues. The reactor design is sound, and it operated successfully for a year prior to the shutdown.

ANSTO has kept the community and customers regularly updated on progress over the past five months.

The reactor cannot recommence operation until regulatory approval is granted by ARPANSA.

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² Australian Radiation Protection and Nuclear Safety Agency

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