ACR-1000—Optimized Plant for Utility Requirements

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The Generation III+ Advanced CANDU Reactor®* (ACR®*) is available in two sizes, the ACR-700® (750 MWe class) and ACR-1000® (1200 MWe class). Market forces (Canada, China, UK) have been pushing towards the larger ACR design, and AECL is now focusing its attention on the ACR-1000. The basic engineering program initiated for the ACR-700 provides the starting basis for the ACR-1000.

We have established key ACR-1000 design objectives, input customer requirements and reviewed lessons learned from ACR-700 development and market feedback. The basic design of the ACR-1000 is virtually identical with that of the ACR-700, operating at similar reactor coolant system pressures and temperatures. This paper focuses on key ACR features and on the engineering and R and D processes to provide strong assurance that the design will deliver. The ACR-1000 design features: 1100 MWe net output, robust design with passive resistance to severe accidents, reactor characteristics for operational safety and reliability, improved CANFLEX®* ACR fuel, a compact core with lattice pitch and reactor face design to enhance maintainability and inspection, and "Smart" systems to permit on-line monitoring and diagnostics.
