

Glossary of Terms

Term	Definition
Calandria:	In the CANDU™ reactor, a large stainless-steel tank which houses the fuel channels and heavy water moderator.
Calandria tube:	In the CANDU™ reactor, the Zircaloy-2 tube which the pressure tube fits in.
CANDU:	Canada Deuterium Uranium. A Canadian developed nuclear power reactor system.
CEAA:	<i>Canadian Environmental Assessment Act.</i> The Government of Canada proclaimed the <i>CEAA</i> in January 1995. The <i>Act</i> ensures that the environmental effects of a project receive careful consideration early in the project cycle, and provides opportunities for public participation in the environmental assessment process.
CNSC:	Canadian Nuclear Safety Commission. The federal Authority responsible for the regulation of nuclear facilities in Canada.
Containment systems:	Prevent escape of radioactivity following potential accidents. A containment boundary is formed by the reactor buildings (reinforced concrete), the pressure relief duct, the vacuum ducts and the vacuum building.
Cumulative effects:	Changes to the environment that are caused by an action in combination with other past, present and reasonably foreseeable future human actions.
Decommissioning:	The act of removing a regulated facility from operation and operational regulation.
Defuelling:	The removal of fuel bundles from the reactor.
Dewatering:	Draining heavy water from the moderator system and primary heat transport system, and their auxiliaries.
Deuterium:	As isotope of hydrogen. A deuterium atom has one proton and one neutron.
EA:	Environmental Assessment. A planning and decision-making tool used to identify and understand the effects of projects on the environment.

Fuel Bundle:	Fuel for the reactor is in the form of compacted and sintered, light uranium dioxide pellets, which are sheathed and sealed in zirconium alloy tubes. Twenty-eight tubes are assembled between two end plates to form on fuel bundle (ref: Safety Report, Part 1, p.1-8).
Fuel Channels:	One of the reactor components; collectively, the pressure tube/calandria tube systems are referred to as "fuel channel assemblies". The fuel channels are located in a "calandria" (a tank), containing a heavy water moderator, penetrated by calandria tubes. Each calandria tube contains an inner "pressure tube" in which fuel bundles are positioned.
Heavy water (D ₂ O):	Water containing significantly more than the natural proportion of heavy hydrogen (deuterium) atoms to ordinary hydrogen atoms. Heavy water is used a moderator in CANDU™ reactors, because it effectively slows down neutrons and has a low cross-section for absorption of neutrons.
Mitigation Measures:	Measures to eliminate, reduce, or control each likely adverse effect of a project. The <i>Canadian Environmental Assessment Act</i> defines mitigation as <i>"the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or other means".</i>
OPG:	Ontario Power Generation.
Radiation:	The emission and propagation of energy through space or matter in the form of electromagnetic waves (i.e. gamma rays) or fast-moving particles, such as alpha and beta particles.
Radioactive:	The condition of a material exhibiting the spontaneous decay of an unstable atomic nucleus into a stable or unstable nucleus; (i.e. uranium-238 decays into thorium-234 (unstable) and polonium-210 decays into lead-208 (stable)).
Radionuclide:	An element or isotope which is radioactive as a result of the instability of the nucleus of its atom (i.e. radium or uranium).
Refuelling:	Refers to the initial loading of the reactor fuel at each unit after removing each reactor from a Defuelled Guaranteed Shutdown State (DFGSS) to an Overpoisoned Guaranteed Shutdown State

(OPGSS).

Refurbishment:	The work needed to extend the life of each reactor unit by replacing the major life-limiting components (such as pressure tubes, steam generators, etc.).
Restarting:	Refers to removing each reactor from an Overpoisoned Guaranteed Shutdown State (OPGSS), achieving criticality and operating the reactor to generate electricity.
Stakeholders:	Refers to individuals, organizations and governments that have an interest in a project. For this EA, they are identified systematically according to the following criteria: proximity to area; use of area; economics; social and cultural concerns; environmental concerns; self-declared/regulatory.
Steam Generator:	Transfers heat from heavy water coolant, via the heat transport system, to raise the temperature and boil light water.
VEC:	Valued Ecosystem Component. Environmental attributes or components identified as having a legal, scientific, cultural, economic or aesthetic value.
Waste management:	In general, waste management refers to the collection, treatment and/or disposal, of that material which no longer serves any useful purpose. Waste occurs in various forms. In the context of the Pickering B Refurbishment for Continued Operation project, waste management may relate to solid, liquid or gaseous materials, both radioactive and non-radioactive, that result from normal operations of the facility.