Nuclear power in Canada – Fact sheet for the UK-Canada nuclear skills workshop

Canada's current nuclear power generation is concentrated in Ontario which has 20 reactors, the 16 in service providing about 50% of the Province's electricity. Quebec and New Brunswick each have one reactor. Overall nuclear power provides about 15% of Canada's electricity (the majority of Canada's energy is hydropower). The industry employs about 21,000 people directly and 10,000 indirectly.

Canada is the world's largest producer of uranium with about one third of world production coming from Saskatchewan mines.

In December 2005 the Ontario Power Authority www.powerauthority.on.ca released its **Supply Mix Recommendations** to the Ontario Government. The OPA recommended that nuclear should continue to provide 50% of Ontario's electricity up to 2050, a proposal that would necessitate refurbishment of existing power stations and new build. The Ontario Government has not yet responded to the report.

Natural Resources Canada oversees nuclear power in Canada with responsibility for the crown corporations **Atomic Energy of Canada Limited** (AECL) www.aecl.ca and the **Canadian Nuclear Safety Commission** (CNSC) www.nuclearsafety.gc.ca. AECL's commercial operations include reactor development, design and construction of CANada Deuterium Uranium (CANDU) nuclear power plants, and provision of reactor services and technical support to CANDU reactors worldwide.

Canada's **Nuclear Waste Management Organisation**, NWMO www.nwmo.ca, was set up in 2002 to investigate and develop an approach to the long-term management of nuclear fuel, which they did via a massive process of public consultation. The report, released in November 2005, recommended "Adaptive Phased Management" of nuclear waste, combining the interim shallow storage of waste, followed by the use of deep geological repositories with continuous monitoring of the used fuel and the potential to retrieve fuel from storage.

Canadian skills initiatives

- The **University Network of Excellence in Nuclear Engineering** (UNENE) www.unene.ca is an alliance of universities, nuclear power utilities, research and regulatory agencies established in 2002 to develop nuclear education and research and development capability. UNENE has established new nuclear professorships in six Ontario universities as well as offering a course based master's programme in nuclear engineering.
- The **University of Ontario Institute of Technology** (UOIT) www.uoit.ca has set up a new school of Energy Systems and Nuclear Science in 2003. The first 50 graduates from nuclear related degree programmes are expected in 2007.
- Perhaps because the Canadian industry is more focussed on operations than decommissioning, skills programmes in Canada tend to be industry led through apprenticeships and training schemes rather than government led.