ONTARIO SOCIETY OF PROFESSIONAL ENGINEERS

The Voice of Ontario's Engineers

Nuclear Energy

OSPE recognizes that Ontario must have a mix of energy generation sources, as outlined in our energy policy statement of December 2008. Base load nuclear generation is an important component of this energy mix and can be paired with elements of the *Green Energy Act* to reduce Canada's greenhouse gas emissions and other pollutants. When procuring energy infrastructure, OSPE encourages the use of Canadian technology and local intellectual property to spur employment and economic prosperity for Ontario. OSPE supports increased investment in nuclear research and a multipurpose research reactor to make Ontario a leading jurisdiction in nuclear technology and the management of spent fuel.

Greening Ontario's Energy Mix

The Ontario Power Authority has indicated that it will submit a revised Integrated Power System Plan (IPSP) to the Minister of Energy & Infrastructure in 2010 to adjust energy planning in light of the *Green Energy Act*.[1] In addition, the Government of Ontario has committed to phasing out coal-fired generation plants by 2014. OSPE will monitor the release of the IPSP to support long-term goals that lead to an increased use of clean, renewable energy sources; the development of conservation programs; and the retention of nuclear generating plants as a vital energy supply.

Recognizing Nuclear

OSPE recognizes the important role nuclear energy plays, and must continue to play, in Ontario's energy supply mix.[2]

Nuclear power has contributed to Ontario's power supply since 1968, with the construction of Douglas Point generating station on Lake Huron. Currently, over 50% of Ontario's power, or 11,000 MW of base load generation, is supplied by 16 operating CANDU reactors as outlined in the table on the right. The previous IPSP called for a maximum of 14,000 MW of nuclear capacity achieved by refurbishment and/or new build.[3]

Nuclear Generating Station	Output
Pickering A and B	3,100 MW
Darlington	3,524 MW
Bruce A and B	4,700 MW

A clean energy source, nuclear generation provides low-cost and dependable power. With new steam bypass technology, nuclear power plants can feasibly counterbalance large and intermittent wind and solar power output. Nuclear base load energy is all the more important as renewable energy takes on a larger share of the energy supply mix. Adding sustainable sources of energy to the electricity supply is a priority of the government, as evidenced in the *Green Energy Act* passed in May 2009. Nuclear both complements and stabilizes the overall base load supply energy, thereby enabling the elimination of coal and minimizing the need for natural gas fired plants.

Procuring Nuclear Facilities

The suspended Request for Proposal (RFP) for procuring new nuclear generating capacity at Darlington will end in February 2010. In the initial RFP process, of the bids submitted, only AECL's was compliant[4]. OSPE

[1] For OSPE's position on the Green Energy Act, please visit: http://www.ospe.on.ca/gr_issues_ENERGY.html
[2] OSPE's policy statement on Ontario's energy supply mix can be found at: http://www.ospe.on.ca/gr_issues_ENERGY.html
[3] Data referenced is up-to-date as of June, 2009

urges the provincial government to end this impasse and move ahead by negotiating with AECL for the construction of new CANDU reactors at Darlington. This support for domestic intellectual property will spur research and development amongst commercial and academic institutions and expand the existing supply chain, adding thousands of long-term jobs in engineering and the skilled trades and entrench Canada, and Ontario, as a nuclear supplier. The construction of AECL CANDU reactors will also displace the burning of carbon based fuels and reduce Canada's green house gas emissions as well as other pollutants.

Restructuring AECL

OSPE encourages the federal government to take necessary steps to improve Canada's role in nuclear science and commercial nuclear power through the restructuring of AECL.

Converting Chalk River and Whiteshell laboratories to national laboratories will enhance partnership opportunities with universities, industry and government; expand research; and spin-off new technology companies beyond nuclear science. A key component to accomplishing this is to replace the NRU reactor with a multipurpose research reactor, as recommended by an expert panel convened by the federal government[5]. The new research reactor will support a growing international nuclear power industry all the while guaranteeing a stable supply of medical isotopes.

The remainder of AECL should be structured as a single Canadian commercial nuclear power supplier with the government as a shareholder, as suggested in the Rothschild report[6]. OSPE believes that Canada must retain the high technology jobs that CANDU nuclear science and technology has created particularly as demand for nuclear power plants expands internationally. This will ensure the survival and growth of approximately 150 companies and 30,000 jobs that support CANDU.

Managing High Level Nuclear Waste:

OSPE supports efforts of Canada's nuclear industry, through the Nuclear Waste Management Organization (NWMO), to develop a long-term safe disposal facility for spent fuel. OSPE also supports the NWMO's selection of Adaptive Phased Management which allows irradiated fuel to be retrieved for an extended period of time should advances in technology make alternative disposal methods safer. It is important to note that a long-term disposal facility is required not only for power reactors but also for research reactors that provide most of our medical isotopes. OSPE encourages the federal government to support basic nuclear research into finding more publicly acceptable ways of managing spent fuel so that burial may eventually become unnecessary.

Updated: February 4, 2010

[4]Ontario Ministry of Energy & Infrastructure, "Ontario Suspends Nuclear Procurement," Press Release, June 29, 2009, http://www.mei.gov.on.ca.wsd6.korax.net/english/news/?page=news-releases&body=yes&news_id=53 (accessed July 7, 2009)

[5] Report of the Expert Review Panel on Medical Isotope Production, November 30, 2009, http://nrcan.gc.ca/eneene/sources/uranuc/pdf/panrep-rapexp-eng.pdf (accessed February 1, 2010)

[6] Rothschild, "CANDU Inc.: Investment Summary," December 2009, http://www.nrcan-rncan.gc.ca/media/newcom/2009/2009123-1a-eng.pdf (accessed February 1, 2010)