

Sell AECL to India
November 19, 2009, 7:20 PM

Canada wants to sell CANDU nuclear reactors to India. A better idea is to sell India the whole company

By Ron Banerjee

With Prime Minister Stephen Harper's recent trip to India, a lot of attention has been focused on the possibility of saving AECL, a federally owned crown corporation, by selling CANDU nuclear reactors to India. Considerable evidence suggests that this scenario is unlikely. A better, more realistic way to rescue the Canadian nuclear industry would be to sell AECL to India and use Indian technology for our next generation of Ontario reactors.

To understand why, it is necessary to look at various technological options and the tortuous history of Indo-Canadian nuclear ties.

AECL and its CANDU nuclear reactors are stuck between a rock and a hard place. Domestically, CANDU reactors have suffered from massive cost overruns and prolonged shutdowns. The sluggish Ontario economy and reduced electricity consumption means that, at best, AECL may look forward to some refurbishment work on older units and the construction of two new units in Canada over the next decade.

Internationally, things look even grimmer. Europe seems to have bet on AREVA's reactors while America is considering AREVA and Westinghouse designs. South Korea and China, which had purchased six CANDUs, have also chosen to look at AREVA, Westinghouse and GE models.

Other CANDU customers include small states with fragile economies, namely Romania and Argentina. Any potential deals would be small and uncertain.

There are reasons why CANDU is such a hard sell internationally. Compared to our Russian, European and American rivals, Canada has less to offer in terms of export credits, industrial offsets and diplomatic arm-twisting.

Additionally, all the rival firms produce light water reactors, which require enriched uranium. CANDU, on the other hand, uses heavy water reactors, which rely on natural uranium and heavy water as a moderator.

This difference underscores a key problem with a proposed privatization (sale) of AECL and its CANDU. The most likely purchasers are AREVA, GE and Westinghouse, the very manufacturers which make competing reactors based on the completely different light water technology.

These firms would be highly unlikely to introduce CANDU heavy water technology into their overseas portfolios, given the radical differences between the two technologies. In fact, the biggest incentive for these firms to purchase CANDU would be to eliminate a competitor in overseas markets, while also getting a piece of Ontario's upcoming award of two new reactors.

The Ontario government seems determined to award this contract to AECL to protect domestic jobs and buttress a "national champion." Buying CANDU seems to be the only way for foreign reactor-makers to participate.

To slash costs, we can expect that any of these firms will try to standardize components among all of their units, both here and overseas. This means that even CANDU reactors built for Ontario will include increasing portions of foreign components.

The net result would likely be zero opportunities for CANDU outside Canada, and a gradually shrinking share of components for CANDUs sold domestically.

On its own, CANDU has poor prospects for international sales and is reliant on domestic sales. Clearly, this is not sustainable.

Selling AECL to anyone would yield immediate funds for a beleaguered government and an end to state subsidies. To get more from a sale, though, Canada should look at an alternative buyer rather than AREVA, GE or Westinghouse.

There is only one other nation in the world which has selected the same heavy water reactor technology as CANDU. India bought and evaluated two CANDUs and two American light water reactors in the late 1960s. Due to a shortage of domestic uranium, India decided to base a massive domestic nuclear program on heavy water technology.

India has built 17 reactors and is constructing six more currently. Indian heavy water reactors have been a scintillating success and, according to the Journal of Nuclear Engineering and Design, have achieved over 90% capacity utilization in the last decade. By contrast, the Ontario Clean Air Alliance reports the province's fleet of CANDUs sported a 65% utilization rate in 2005. The Canadian Nuclear Society claims an overall CANDU fleet performance of closer to 80%.

India's NPCIL has been able to lower costs and outperform AECL thanks to a massive pool of technical talent and an enormous, ever-expanding economy with increasing energy demands. The energy requirements are so high that NPCIL cannot construct heavy water reactors quickly enough, and needs to purchase foreign reactors. This led to the Indo-U.S. nuclear deal, which allows India to buy foreign reactors as long as they are open to inspections and used for civilian (non-military) purposes.

Multi-billion dollar deals have already been signed with Russian manufacturers and AREVA, while negotiations with Westinghouse are ongoing. The stakes are massive: India will deploy reactors worth \$40-billion in the next decade. Half of these will be

imported.

Over the next seven years, NPCIL plans to build eight indigenous 700 megawatt (MW) heavy water reactors and a 500 MW fast-breeder reactor, in addition to contracts with foreign manufacturers. When chairman S.K. Jain was asked how so many reactors could be built, he bluntly stated that NPCIL was cash-rich and had billions of dollars in reserve.

Given that India is familiar with heavy water technology, one would think that CANDUs would have a better chance than other reactors. However, the contracts signed so far have been for the unfamiliar light water reactors built by CANDU competitors.

This baffling situation is due primarily to historic boondoggles perpetrated by previous Liberal administrations. In 1973, India tested nuclear weapons despite not being signatories to the Nuclear Proliferation Treaty (NPT). India refused to sign the NPT because neighbouring China, which had attacked India in 1962, was permitted under the NPT to possess nuclear weapons.

Canada accused India of using Canadian-supplied reactors to build the first elements of her nuclear arsenal. The Liberal government then took a fateful decision that ultimately resulted in CANDU's current predicament: It suspended all nuclear cooperation with India.

As a result, India developed an indigenous series of heavy water reactors that dramatically outperform CANDUs in performance and cost attributes.

According to University of Toronto professor Arthur Rubinoff, no nation reacted more harshly to India's 1998 nuclear tests than Jean Chretien-led Canada. The Liberals recalled Canada's ambassador, cancelled trade talks and urged the world community to take harsh action.

These actions, akin to cutting off one's nose to spite one's face, explains why despite the similarities, it is AREVA and the Russians who have scored reactor sales in India rather than CANDU.

Our Conservative government has tried valiantly to reverse bitterness created by self-destructive Liberal policies. Voting in favour of the Indo-U.S. nuclear deal was the first step. Mr. Harper and his huge delegation to India emphasized eagerness to resume nuclear trade.

Canada may have already missed the bus on this file, however. Obstruction from non-proliferation zealots within Canada's legendary bureaucracy has resulted in Russia and France leapfrogging us and signing reactor deals. Also, the Indians are nervous about the minority status of Stephen Harper's government and how an alternate regime may deal with India.

Additionally, the more advanced state of the Indian nuclear industry and superior

performance of Indian reactors raise legitimate questions about whether there are any advantages to buying CANDU.

On the other hand, rescuing AECL with Indian ownership would have obvious benefits.

India is developing a new thorium reactor — an element both India and Canada have in abundance — which will be the world's cleanest and safest. With its enormous clout, size and access to low-cost technological solutions, India is much better positioned to achieve global sales.

The participation of an Indian-owned AECL in India's massive domestic nuclear program, as well as potential Indian-led foreign sales efforts, would be likely to generate more employment and benefits for Canada's nuclear industry. It is clearly a more attractive proposition than the futility of a small independent player competing against muscular, better capitalized foreign firms backed by superpowers.

India has achieved a tremendous track record of rescuing faltering foreign firms in places like Europe. Britain has sold the remnants of its auto industry (Jaguar Land Rover) to an Indian firm and recently pledged funding to the Tata Group for the production of an electric car in the U.K.

Tata Steel has also purchased and overhauled Europe's largest steel manufacturer, Corus Steel.

Europeans have entrusted Indian behemoths to rescue such important strategic industries as steel and automotive sectors. There is no reason why Canada's faltering AECL cannot benefit from Indian ownership as well. It may be our only ticket to saving the nuclear industry.

Financial Post

Ron Banerjee is the director of Canadian Hindu Advocacy, hindus@canhindu.com