Preserving Canada's Leadership in Medical Isotope Supply

By Stephen P. DeFalco

Each day, medical isotopes are used to diagnose and treat tens of thousands of patients worldwide. These tiny substances are medical marvels, combating diseases ranging from cardiac and neurological conditions, to several types of cancers.

A continuous and reliable supply of medical isotopes is essential. Yet that supply has been again threatened by the most recent shutdown of Atomic Energy of Canada Limited's (AECL) National Research Universal (NRU) reactor – one that is having a detrimental impact on patients.

This situation, which has been described as a catastrophe by leaders in nuclear medicine, should be the catalyst for a long overdue solution to the supply of medical isotopes – a made-in-Canada solution to benefit patients and support this country's leadership in a vital industry.

Unfortunately, the Government has rejected a made-in-Canada solution and recently stated its desire to exit the production of isotopes altogether. We believe this is the wrong public policy decision for Canada and for the world.

The NRU reactor at Chalk River, Ontario, is the world's oldest and largest producer of medical isotopes, supplying up to 40% of world demand and 50% of North American demand. These isotopes are processed by MDS Nordion in Ottawa, and supplied to radiopharmaceutical companies for distribution to hospitals and radiopharmacies throughout the world. Canadian-produced isotopes are used in about 50,000 medical procedures a day, 5,000 of those here in Canada.

Canada has been a leader in isotope production and has fostered an innovative industry that creates high-value Canadian jobs. Medical isotopes are the foundation to advance research for improved drug discovery and development. They are our pathway to personalized medicine – enabling healthcare professionals to improve lives through targeted imaging and targeted therapy, thereby providing medical diagnosis and treatment specific to an individual.

As Canada strives to maintain a leadership position in Science and Technology, it is critical that we focus not only on the requirements of today but also on the advancement of nuclear medicine for tomorrow. To keep this industry alive, we need new medical isotope production capacity.

Anticipating the need for new capacity, MDS in 1996 contracted with AECL to construct and deliver two reactors and a processing facility dedicated solely to producing medical isotopes. This MDS funded collaboration, which was slated to be fully operational in 2000, became known as the MAPLE project. The MAPLE reactors were intended to replace the NRU and keep Canada at the forefront of the innovative field of nuclear medicine.

However, in May 2008, the Government of Canada and AECL walked off the job - unilaterally canceling a commercial contract for which they had been paid approximately $350 million to complete. They did so without disclosing a long-term plan for the supply of medical isotopes beyond relicensing the 50-plus-year old NRU. This decision was considered a blow to worldwide supply reliability, and angered leaders in nuclear medicine who had not advocated for supply in their various countries as they were waiting for Canada to bring the MAPLEs on line.

The MAPLEs are state-of-the-art reactors. Their sole purpose is to produce medical isotopes. Indeed, one MAPLE reactor powered at 50 per cent could produce enough isotopes to replace production from the NRU. And the MAPLEs do work. They created isotopes, just as the NRU has created isotopes. This fact has been verified by independent observers. The MAPLE reactors are complete, they are safe and they await final commissioning.

What is needed now is a collaboration of international experts, with or without AECL, to bring this much needed isotope capacity online.

Is the Government absolutely positive that with the help of international experts the MAPLE reactors would not be able to produce medical isotopes? Given the global shortage of isotopes, it's time for Canada to reverse its public policy decision. Activating the MAPLE reactors will do more than provide a secure supply of medical isotopes for the welfare of patients worldwide. It will preserve Canada's leadership position in the innovative and increasingly important field of nuclear medicine.

Stephen P. DeFalco is President and Chief Executive Officer of MDS Inc., a Canadian global life sciences company headquartered in Ontario. MDS Nordion is a business unit of MDS Inc. and is headquartered in Ottawa. MDS employs approximately 1,600 people in Canada.