A black sheep in the nuclear family

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Canadian isotope distributor MDS Nordion thwarted a 1999 effort to create a global backup plan to mitigate the effects of a disruption to the world's medical isotope supply, says the head of a major European isotope supplier.

The Association of Imaging Producers and Equipment Suppliers, a noncommercial body comprising European nuclear medicine stakeholders, recently renewed calls for the creation of a global isotope coordination policy after the extended shutdown of Canada's National Research Universal (NRU) reactor resulted in an isotope shortage (*CMAJ* 2008;178[5]:536-38).

Yet, efforts to create such a global contingency plan failed in 1999 when MDS Nordion refused to participate, says Henri Bonet, chief executive officer of the Belgian isotope supplier Institut National des Radioéléments.

Atomic Energy of Canada Limited

Interior view of the National Research Universal reactor at Chalk River. When originally developed, the NRU was a 200 MW reactor, but it was converted to 60 MW with high-enriched uranium fuel in 1964 and then to 135 MW running on low-enriched uranium fuel in 1991.

"Let me be frank, Nordion was the first to say 'no,'" says Bonet, who spearheaded the effort. "I am still convinced that to help the nuclear medicine community, we need to have such an agreement between all the large suppliers and customers."

The December isotope shortage forced hospitals in North America, Japan and other countries to reschedule thousands of diagnostic and therapeutic procedures, leaving patients in the lurch. The situation might even have been worse, had MDS Nordion, which is contractually bound to supply the majority of Canadian nuclear medicine departments, succeeded in making its European and Japanese clients sign long-term exclusivity contracts a decade ago. In 1998, the European Commission and Japanese Fair Trade Commission informed the company it would face hearings for abusing its dominant position in the marketplace if it pursued the contracts, compelling MDS Nordion to drop them.

"We would have been more or less forced to give up the moly [molybdenum-99] market, which provided, at the time, 80% of our revenue," says Bonet. "It was a matter of survival."

Despite repeated requests, MDS Nordion has also consistently refused to share information about basics like planned maintenance shutdowns that might help other isotope suppliers and distributors coordinate production schedules to ensure that at least 2 reactors are running at all times. The Institut National des Radioéléments, United States-based Covidien, which obtains isotopes from a Dutch reactor, and Nuclear Technology Products in South Africa have long sought such data, Bonet says. "Unfortunately, we never know when the NRU [National Research Universal] is shutdown for any reason."

The Nuclear Research and Consultancy Group, which runs the reactor in the Netherlands, confirmed Bonet's claim in an email to the *CMAJ*. "The consolidated 2008 reactor program shows simply blank rows for the NRU; we have no idea when it is planned to operate and when it is not. The 2007, 2006 and earlier programs were the same; no Canadian input was provided," writes Kevin Charlton, the company's commercial manager for isotopes.

"In the same way, operational disturbances which may affect the program are communicated openly within Europe; but similar information is not communicated from Canada. Without clear information it is not possible to make the best plans and it is not possible to respond to supply problems in the most effective way."

Atomic Energy of Canada Ltd. operates the Canadian reactor, located in Chalk River, Ont., but doesn't communicate with foreign isotope distributors. "Nordion is the interface," says Director of Communications Dale Coffin. "We can only communicate to the rest of the industry through them."

MDS Nordion distributes about half of the world's supply of molybdenum-99, the parent isotope of technetium-99, which is used in more than 80% of diagnostic imaging tests.

For its part, MDS Nordion claims that a global backup plan would have little value. The firm claims foreign isotope suppliers don't have the capacity to increase production to required global levels when the NRU isn't operational.

"No matter how coordinated a plan might be, it's not going to alleviate a situation such as just took place," says Grant Malkoske, vice-president of strategic technologies. "Frankly, I'm a little perplexed as to why they might think the sharing of all this information would make a difference."

Malkoske claims the most effective means of stabilizing the world's isotope supply chain lies in domestic initiatives, not a global backup plan. "For me, it would be 2 things: ensure NRU is available, bring MAPLEs [Multipurpose Applied Physics Lattice Experiment reactors] online."

Nordion also says it has arrangements with the South African and Belgian suppliers, from whom they make "regular purchases." The South African supplier did not respond to inquiries about those arrangements, while Bonet says the agreement is lacking. "I am not happy with the way Nordion is fulfilling its obligations with regard to those backup contracts." — Roger Collier, *CMAJ*

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