



November 19, 2009

Dear Nuclear Medicine Professional,

Maintaining patient access to critical medical isotopes during the current molybdenum 99 (Mo 99) global shortage requires a focused, multi-faceted approach for immediate, short-term and long-term solutions. Covidien has been a strong advocate for a number of recent developments in Europe which will positively impact the situation in 2010 and beyond.

- The BR2 reactor is operated by the Belgian Nuclear Research Centre SCK-CEN. Covidien was actively engaged with its Board of Directors during the decision making process and is providing considerable funding to support the added BR2 cycle in June, 2010. We will receive a significant portion of the Mo 99 produced by BR2, helping to offset the lack of supply from the High Flux Reactor (HFR) in the Netherlands, which is scheduled to be shut down for about 6 months beginning mid February.<sup>1</sup>
- Covidien has also secured an additional target position in the BR2 reactor that will increase output throughout the period that HFR is off line in 2010, allowing additional generator production to improve patient access to Tc 99m for critical procedures.
- The French government made the decision to delay a routine maintenance cycle for the OSIRIS reactor by two months in the spring of 2010, also benefiting the situation. As a result of our long-standing arrangement with the IRE Mo 99 processing facility, we will receive Mo 99 produced by the OSIRIS reactor when needed to supplement other suppliers.
- The Dutch government recently announced it supports construction of a new nuclear reactor for medical isotopes to replace the current HFR in Petten. The Nuclear Research and Consultancy Group (NRG), which operates the reactor in Petten, has plans to build a new modern reactor based on LEU technology in the Netherlands that will be called 'Pallas'.<sup>2</sup> Covidien supports this initiative as a member of the steering committee for the project and readily provides our expertise as needed. We are focused on maximizing patient access to Mo 99, and applaud the Dutch Cabinet's decision to develop plans that help ensure long-term reliable and continuous supply of this critical isotope.

While the recent decisions by European reactor operators have improved the outlook, our assessment of the current 2010 reactor schedule indicates several weeks where Mo 99 production will be diminished, reflecting these new developments, the HFR shutdown and reported return to service of the Nuclear Research Universal (NRU) reactor in Canada by spring.<sup>3</sup> It is important to note that some overlap of the additional BR2 cycle and the extended OSIRIS availability will occur. There will also be brief periods of required routine maintenance for BR2 while the HFR is off line; OSIRIS will not have capacity to completely offset the lack of BR2 production during those periods.

As we have done throughout this critical shortage, Covidien will continue to obtain Mo 99 from all available sources as 2010 unfolds. We will also keep you informed when the situation changes to assist with your immediate, short-term and long-term planning. More specific details on the extended 2010 outlook will be provided as we get closer to the HFR shutdown.



To that point, we have developed extended projections of Covidien’s expected Tc 99m generator production, based on supply estimates from the four major medical isotope reactors in Europe and South Africa. The resulting calendar for the U.S., Canada and Latin America extended through January is shown below. NOTE: This update may differ from previous calendars based on evolving information. Daily projections are based on current data and subject to change.

NOVEMBER							DECEMBER							JANUARY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7			1	2	3	4	5						1	2
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
29	30						27	28	29	30	31			24	25	26	27	28	29	30
														31						
Generator standing orders met with some extra; minimal Tc-99m UD impact							Majority of generator standing orders met but no extra; some Tc-99m UD impact							Shortage to generator standing orders, significant Tc-99m shortage and UD impact						

We would also like to reinforce the successful Tc 99m conservation program through our radiopharmacy network, encouraging more thoughtful unit dose Tc 99m ordering practices that maximize availability of supply to patients, which has resulted in hundreds of additional patient doses daily. Similar efforts are encouraged industry wide. We appreciate the nuclear medicine community's willingness to carefully schedule patients, providing greater access to those most critically in need of this vital isotope. We continue to boost production of thallous chloride Tl 201 injection for those procedures where it can be a clinically appropriate substitute.

As additional updates are available, we will share them with you. To learn more about the current Mo 99 supply situation and related information, please visit the special update page on our web site at [www.covidien.com/Mo99supply](http://www.covidien.com/Mo99supply).

Sincerely,

Elaine E. Haynes, RPh  
 Vice President & General Manager, U.S. Commercial Operations  
 Imaging

1. Maintenance Stop High Flux Reactor Petten (last accessed November 18, 2009) <http://www.nrg.eu/general/nieuws/2009/20090709en.html>
2. "Government supports construction of new nuclear reactor for medical isotopes" (last accessed November 18, 2009) <http://international.vrom.nl/pagina.html?id=44577>
3. NRU Status Report #30 - AECL provides update on NRU activities (last accessed November 18, 2009) [http://www.aecl.ca/NewsRoom/Community\\_Bulletins/091118.htm](http://www.aecl.ca/NewsRoom/Community_Bulletins/091118.htm)