

Nigeria

Early preparedness facilitates crisis management

Nigeria made a commitment to upgrade its radiation protection infrastructure in 1996 and quickly became a model for demonstrating that it's time to get serious about radiation safety, both nationally and internationally.

It took only two weeks for Nigerian parliament to pass the necessary legislation. Then, just as implementation plans and processes for establishing a regulatory body were getting underway, a new government swept into power and the law languished for six years. But broad use of radiological sources in the oil industry and in the medical sector soon put the need back in the spotlight. In 2001, the Nigerian Nuclear Regulatory Authority (NNRA) was established, with Dr. Shamsudeen Elegba at the helm as Director General. One year later, the regulatory framework was in place and the NNRA was fully functional.

Nigeria regularly uses radioactive sources in the oil industry for well-logging and industrial radiography (essentially a type of X-ray to check for cracks and leaks). Similarly, radioactive sources are used in thousands of factories as level and density gauges. In the medical sector, radioactive sources are used for cancer treatment in the six radiotherapy centers in the country as well as in several thousands of X-ray diagnostic units.

"At the time, we had no way of monitoring the workers, we had no dosimetry readers, nor any guidelines for licensing dosimetry service providers within Nigeria," says Dr. Elegba. Today, guidelines are in place and a database has been created to store names, organizations and dosimetry readings of individuals who work with radiation sources. In addition, two national service providers have received accreditation to monitor radiation doses of exposed workers.

But as the NNRA built its capacity and carried out its mandate, a crisis developed in the medical sector, where imaging, nuclear medicine and radiotherapy are common procedures for the diagnosis and treatment of patients. In 2002, routine inspections revealed that the radiotherapy centre at a particular hospital was sub-standard.

"What we found was shocking," admits Dr. Elegba. "We had to take serious measures." The hospital in question, which happened to be state-run, was given six months to clean up its act—or it would be permanently shut down. This hard-line stance was something of a 'trial by fire' for the NNRA. News of the ultimatum spread quickly throughout the medical community, all the way up to the Ministry of Health and

Dr. Elegba's decision to follow through with the hospital closure met stiff challenges.

A short time later, the Government reviewed the NNRA report and called Dr. Elegba with a three-word directive: "Keep it closed!" With those words, Dr. Elegba knew he had the backing of his government on the importance of radiation protection. He launched a nationwide audit of all hospitals, focusing on the competency of personnel, state of the equipment, radiation protection plans and emergency procedures.

Dr. Elegba credits the IAEA's assistance with helping to put in place a national programme for upgrading radiotherapy in Nigeria, including a recent decision to integrate radiotherapy into the National Cancer Control Policy. "That was the icing on the cake for us," he says. "Now radiotherapy is on the national conscience."

The hospital situation might have been exactly the training the NNRA needed to deal with a completely unforeseen crisis that hit in December 2002, this time directly linked to the oil industry. Two radiation (americium-beryllium) sources belonging to a well-logging company went missing while in transit. The worst-case scenario was that the two sources could potentially be used to build radioactive 'dirty bombs'.

Nigerian authorities called the IAEA to assist in the investigation. Again, the NNRA took a tough stance, immediately suspending the company's well-logging operations while an international search involving multiple countries, the IAEA and other organizations got underway. At the same time, the NNRA launched local campaigns, warning residents in the oil-producing region not to touch the described materials and urging health workers to be on the look-out for anyone with prolonged nausea or skin burns, some signs of overexposure to harmful radiation.

The sources were later returned to Nigeria through the United States. The incident stimulated active cooperation between NNRA and various security organisations in Nigeria. Today, the import, use and export of radioactive sources in Nigeria are effectively controlled by the NNRA in compliance with the IAEA's "from cradle to grave" principle.

"Now we have a better emergency response capability," says Dr. Elegba, noting that a national committee on nuclear security and radiological emergency management has been created as part of the country's National Energy Management Agency.

—Linda Lodding/Managing Editor