

Radiological emergency system in Madagascar, case of loss of a source of industrial radiography

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Abstract: In Madagascar, a national radiological emergency response is not formally established. However, an Ad Hoc Committee of safety and nuclear safety and radiological is in place. The committee is composed of several Government entities and the role of each is identified. This Ad Hoc Committee has demonstrated its effectiveness for real action in 2010 with the loss of industrial radiography Container with Ir-192 source, the emergency is classified in threat category IV [1] . Concerning the theft, the communication with the public and the other state entities, the search for the source and the source recovery were conducted in coordination between the different members. And of course, the lessons were reported during the operation which lasted more than three months.

The Ad Hoc Committee is composed of BNGRC (Bureau National de Gestion des Risques et des Catastrophes), Madagascar-INSTN (Institut National des Sciences et Techniques Nucléaires), Ministry of Foreign Affairs, the intelligence service, the gendarmerie, the Police and justice. The BNGRC is the body responsible for managing all emergency responses at the national level. Currently, the BNGRC often manage emergencies caused by natural disasters. The BNGRC uses the skills of Madagascar-INSTN, which is the Radiation Protection Technical Body, with regard to expertise in radiological emergencies. The Foreign Ministry is in charge of communication with other countries and international agencies, and the implementation of various agreements and conventions.

The notification of a radiological accident or incident can be done at the BNGRC or Madagascar-INSTN. But most often, users notify Madagascar INSTN as it was the case this time.

The declaration of the lost source is made at police headquarters in the village of Ranomafana, located at 150 km from Antananarivo. Note that more than a hundred sources, categorized level 2 and 3 [1], notified and authorized, are used in the eastern part of the country. Then, the owner of the source has notified Madagascar-INSTN. From there, the ad hoc committee met in emergency. This meeting was held in the local of BNGRC. The meeting has allowed to confirm the facts and to analyze the different possible reason for the theft of this type of source. View the level of risk that represents the source, the committee decided that it is urgent to find and retrieve this source.

A letter of information to the various units of the gendarmerie and the police was established by the Committee. This letter includes a description of the lost source, with color images, and precautions in case of discovery of the source. The Committee then made an appointment with the prosecutor to the report of the situation, and to better organize themselves in order to have a faster response if the case was repeated.

The source was found by members of the gendarmerie in Toamasina located at 350 km from the Capital. A team of Madagascar-INSTN moved on up there, the days of Christmas, to control the integrity of the source, it was later taken back to Antananarivo to be secured. Apparently the thieves were motivated by the market value of the source.

Despite the absence of a National Radiological Emergency Response Plan, the Ad hoc Committee has demonstrated its efficiency. The need for a National Radiological Emergency Response Plan has been felt for a better coordination, a greater speed and efficiency in response to radiological emergencies.

Lessons learned

First of all, it is important to note that the ad hoc committee members knew each other well before the emergency. Indeed, the ad hoc committee has already initiated action in response to the loss of a small check source in 2009. But before such an emergency, the committee had met on many occasions for drawing up new legislation on nuclear safety.

1. Given the previous meetings, each committee member is already aware of what a source of ionizing radiation and its dangers. Fortunately, the real emergency was not the first meeting of the committee. The first lesson here is that a real emergency may not be the first meeting of the committee response. The preparatory meetings or briefing on the role of each should be organized periodically.
2. The absence of a plan and procedure made it difficult to prepare communication. Indeed, given the source category and the country's political condition, the committee discussed how to communicate, what to communicate and for whom is the communication. Note that no information was leaked to the newspapers and the committee decided not to make declaration to the press. Workers and the employer of the company that lost the source have all measured the situation in which they were, that none contacted the press
3. When it was confirmed that this was a theft, information on the source is brought to the units in charge of searching for objects stolen, and in particular in the region of the loss of the source. The writing of an information letter has been entrusted to Madagascar-INSTN. This letter should be easy to understand with maximum visual information to enable to recognize the source. It is the command that was responsible for the distribution of the letter to the elements of the field.

When the source was found, Madagascar-INSTN was notified by the gendarmerie command. Radiation protection agents were immediately moved to Toamasina. The Radiation Safety Officers then identifies the source. The Radiation Safety Officers identified the source. They then verified the integrity of the container of the source, and then verified the presence of the source in its container with a portable spectrometer. After setting the administrative aspects, while the questioning of suspects continued, the team of Madagascar-INSTN brought back the source to Antananarivo.

In conclusion, the ad hoc committee has allowed better coordination of the emergency response. Thus, each stakeholder had played his role according to the field of intervention of each.

REFERENCE

[1] IAEA GS-R-2 Préparation et intervention en cas de situation d'urgence nucléaire ou radiologique