

Radiation Protection in Suriname – report on a mission by the Dutch Society for Radiation Protection (NVS)

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Abstract The Dutch Society for Radiation Protection (NVS) was invited by PAHO/WHO to visit Suriname for a mission with the aim to give recommendations on proposed legislation and on possible systems for education and training. The mission took place in November 2019 and ended with the first Suriname meeting of all relevant stakeholders. In this contribution, we will report on the outcomes of this mission and the potential IRPA-membership of radiation protection professionals in Suriname.

KEYWORDS: *IRPA, Suriname, Education & Training, Graded approach.*

1 INTRODUCTION

The International Radiation Protection Association (IRPA) invites national or regional associated societies to open membership to radiation protection experts working in a country not covered by such an association. This will also allow them to become part of a wider network providing exchange of knowledge and experience in the field of radiation protection. Ultimately, this will strengthen national radiation protection in the country concerned.

From the contacts of the Dutch Society for Radiation Protection (NVS) with staff of the Paramaribo Academic Hospital in Suriname, it became clear that a detailed overview of the 'playing field' in the Republic of Suriname is lacking, while the number of radiation protection experts in Suriname is very limited. At the same time, it also became clear that Suriname - partly in view of its desired membership of the International Atomic Energy Agency (IAEA) - is in the process of revising its regulations in the field of ionizing radiation.

The contacts between NVS and the Academic Hospital in Paramaribo led to an invitation to the NVS from the Ministry of Health of Suriname - supported by the Pan American / World Health Organization (PAHO/WHO) - to visit Suriname, with the following main objectives:

- A. To make an overall inventory of the applications of ionizing radiation and to make recommendations concerning the setting up of a control system of these sources (regulatory framework).
- B. Commenting on the current Ionising Radiation Safety Decree and making recommendations with regard to a new Decree.
- C. To make recommendations to promote knowledge and transfer of knowledge in the field of radiation protection.

This visit took place from 5 to 10 November 2019 by three board members of the NVS. The first three days of the actual mission (6-8 November) were primarily devoted to site visits (medical centres, various authorities and the national oil company, Staatsolie). The fourth day consisted of a stakeholders meeting in the form of a symposium/workshop on (the organisation of) radiation protection.

The NVS mission took place in parallel with a visit of a delegation of the IAEA aimed at Suriname's application for IAEA membership.

Suriname is a country in South America, with a population of roughly 600,000, 90% of them living in the coastal area. The capital and main city of Suriname is Paramaribo (pop. 300,000). The country has no nuclear power plants nor nuclear medicine.

In this contribution, we will first mention some important findings (chapter 2), summarize the recommendations to the authorities of Suriname (chapter 3) and report on the follow up by the NVS (chapter 4). We will end with some recommendations to other IRPA Associate Societies intending to support RP professionals in countries without organized radiation protection.

2 OBSERVATIONS

Visits were planned to those locations where main applications of ionizing radiation were expected, i.e. some hospitals and the national oil company, Staatsolie. Both here and during the visits at the various regulatory bodies, we took the opportunity to question them about non-obvious presence of radioactive material or X-ray devices. Main observations were

- A regulatory framework is basically lacking. Current regulations only focus on occupational exposures.
- High risk applications are in general used safely and in line with international regulations and standards.
- There is a great shortage of expert personnel; an example of this is that the country only has one medical physics expert / radiation protection expert.
- The country is not aware of the possible presence of naturally occurring radioactive material, the possibility of illegal transport of sealed sources or the necessity to have arrangements in place for emergencies.

The mission was completed with a stakeholder meeting / workshop held on Saturday, 9 November 2019 in Paramaribo, informing the participants on the scope of, and on recent developments in radiation protection in Suriname. This meeting was the first of its kind in the country and attracted around 50 people from regulatory bodies and authorities, medical institutions, companies dealing with natural resources and organisations like PAHO, IAEA and NVS. This number – considering the population of Suriname – proves the need for adequate information, education and regulation.

A small survey was conducted among the participants of the stakeholder meeting. The results of this survey confirmed the previous conclusion: there is a great need for information and competence building in Suriname.

3 RECOMMENDATIONS TO THE SURINAME AUTHORITIES

After the visit, the NVS delegation wrote down its findings and recommendations in a concise report at the request of PAHO/WHO and the Surinamese Ministry of Health [1]. Here we only summarize the main recommendations.

With regard to objective A:

- Extend the source inventory to a number of additional areas of work because it emerged during the mission that not all radiation sources had yet been inventoried and that those involved were not always aware of the presence of radiation sources.
- The mission revealed the need to establish an independent regulatory body to promote radiation safety. It was advised to investigate the possibility of having the National Institute for Environment and Development in Suriname (NIMOS) act as an independent regulatory body.

With regard to the objective B:

- In order to address all relevant radiation protection issues, it is advised to use EU Directive 2013/59 [1] as the first starting point for the new Ionising Radiation Decree (the EU Directive is more concise than the IAEA BSS). The NVS has offered to advise on the content of a draft text of a new Ionising Radiation Decree as soon as it has been drawn up.

With regard to the objective C:

- Realize a small network of radiation protection experts (Radiation Protection Experts, RPEs) in Suriname, consisting of 6 - 10 persons.
- Periodically share the knowledge and experience from this network with all stakeholders in an organized context.
- Realize one basic radiation protection training for supervisors (RPOs).
- Ensure that the various authorities also have sufficient expertise and material to be an equal discussion partner.

4 FOLLOW UP BY THE NVS

Together with stakeholders in Suriname, the NVS is currently investigating the possibility of setting up an NVS chapter 'Radiation Protection in the Caribbean', organizing periodic events that meet the needs of the Surinamese radiation protection community. In the longer term, the feasibility of an independent IRPA Associate Society in Suriname could be investigated.

As a first step, a small survey was conducted among the stakeholders in Suriname, collecting feedback on the initiative to establish a chapter of the NVS. Questions furthermore focus on the expectations the responders would have from this chapter. The survey was distributed among the participants of the workshop in November 2019. The response to this survey was 50%. Main conclusion from the survey were:

- main objective of this chapter should be the safe application of ionizing radiation
- promoting expertise in, and providing information on radiation protection should also be important objectives
- the financial contribution of the members should be kept as low as possible
- in Suriname the expected number of members will be between 10 and 20

Based on the conclusions of this survey, the Dutch Society has proposed to establish the chapter 'Radiation Protection in Suriname and the Caribbean', which was adopted by the General Assembly of the NVS on 13 November 2020. On the occasion of the realisation of this new chapter, radiation protection professionals in Surinam were invited to participate in the online NVS-symposium on 13 November. Roughly 30 professionals from Suriname attended this event. A first meeting of the new chapter is scheduled for the first quarter of 2021.

Keeping in mind the immense lack of expertise in Suriname, the NVS can also play in role as an intermediary in e.g. facilitating the exchange of RP experts / apprentices. We hope to elaborate on this in the near future.

5 CONCLUSION

The NVS mission to Suriname revealed some aspects that will be common to many smaller countries, even when adequate expertise with respect to radiation protection is available. In these countries, the radiation protection community will in general depend on collaboration with other countries to organize symposia, workshops and network meetings. IRPA societies might consider opening their membership actively instead of passively for RP professionals from small countries, especially when a clear need for expertise is present in the country under consideration. Of course, in many cases a common language will be a desirable prerequisite for this membership.

IRPA Associate Societies can also play a role in advising authorities with respect to the regulatory infrastructure or a sound system of education and training in Radiation Protection. One should keep in mind that in doing so - especially in countries with no regulations or training programs in place - the graded approach should be taken into account. It implies focusing on e.g. awareness, basic instruction and high-risk applications. As an example, we mention our recommendation to establish just one basic course for RPOs in Suriname. A full-scale system of Education and Training, both meeting the graded

approach and the requirement to be application specific is only feasible for large countries with a developed radiation protection system [2].

We finally hope that our mission has contributed to improving radiation protection in Suriname on the long term. Whether the RP situation in a country will improve on the short or on the long term is always uncertain: it certainly requires patience. It should however not hamper IRPA Associate Societies in offering their help to countries that need assistance in building a RP community or joining the international RP community.

6 ACKNOWLEDGEMENTS

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7 REFERENCES

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