Item R 8.1 report to RASSC on

National Workshop on the Implementation of the IAEA General Safety Requirements Part 3 - Radiation Protection and Safety of Radiation Sources

Gaborone, Botswana
13-16 August, 2019

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Objective and scope

**Objective:** In the response to request from the government of Botswana to provide expert services and guidance on radiation safety requirements during a National Workshop on the Implementation of GSR Part 3.

**Working method:** Each topic for presentations will be followed by a moderated group discussion among the participants with the objective to identify steps or actions needed to close eventual gaps in the national regulatory system, as well as in practical applications. Work on the identified steps or actions is outside the scope of this funding and has to be covered somewhere else.

**Scope:** Radiation protection of public in existing and planned exposure situations, radiation protection in occupational exposure and application radiation protection principles in emergency exposures.
Expectations

- Active participation – there are no stupid questions
- Respect and attention
- Information and knowledge is shared back home
- Knowledge is applied in practice
- Identify gaps and priorities for future work and steps needed to close the identified gaps
- Facilitate cooperation among the professionals in the country
- Enjoy!
Layout of the workshop

- General requirement for radiation protection (justification, optimisation, limitation, regulatory system, roles and responsibilities)
- Occupational exposure (requirements for monitoring, health surveillance)
- Medical exposure: development of Diagnostic Reference Levels and Dose Planning Levels.
- Justification of practices; emphasis on Human imaging for non-medical purposes
- Emergency exposure situations (emphasis on, but not limited to: preparedness and response for an emergency, exposure of emergency workers)
- Existing exposure situations (emphasis on, but not limited to: public exposure due to radon indoors, exposure due to radionuclides in commodities)
Lecturers

• Dr. Olivera Ciraj Bjelac, Professor
  Deputy Director and Head of Laboratory of Radiation Measurements
  Vinca Institute of Nuclear Sciences, Serbia
  And Full professor at School of Electrical Engineering,
  University of Belgrade, Serbia

• David Owen,
  Principal Inspector – Nuclear Safety
  Office for Nuclear Regulation, UK
  Former: Defence nuclear sector, Civil nuclear sector at British Nuclear Fuels

• Dr. Olga German,
  Regulatory Standards Specialist
  IAEA
  Former: Lead Inspector Decommissioning and Operation, Swedish Radiation Safety Authority
  Vattenfall AB, Division Nuclear
Outcome of the workshop

• 36 participants representing ministries, authorities, industry, service providers and medical establishments.

• 15 presentations delivered by the experts and myself.

• 4 national presentation done by the Botswana representatives.

• The discussions revealed the need of further work on understanding the requirements of the IAEA and closing gaps in regulatory system, as well as on the implementation of the requirements.

• Some agreements on further work to be initiated was reached in the room:
  – Meeting to discuss documents on emergency preparedness;
  – Drilling of national first responders;
  – Meeting with interested parties on how to proceed further with the identification of existing exposure situations.
Group discussions, example

Case study

You are the RPO at a company that uses a gamma radiography source in an enclosure. When reviewing the dosimetry results, you notice that one worker’s dosimeter has a recorded dose of 80 mSv after a routine monitoring period. What actions should you take?
Group discussions
1. Was the organised BSS workshop useful for you and your organisation? Kindly explain why yes/no and how.

- Yes it was useful. Our health institution is owned by the Mine, Jwaneng Diamond Mine, which puts safety first. The concepts which I got from the workshop are vital in radiation protection and safety as it is of paramount importance. Safety is always a priority in our work environment.

- Yes. The workshop presented opportunities for the university to close the needs gap e.g radioactive waste storage and training in radiation protection.

- It was useful as it informed me about current developments in radiation protection

- I was helpful as I realized that nothing is done to ensure the health and safety of radiation officers and it proved that measures have to be taken to do that.
Feedback received (II)

2. Did this workshop provide you with the information needed to further implement the requirements of the BSS? If some information was missing, kindly provide examples of what was missing.

- Nothing much was missing.
- The workshop provided enough information.
- Yes, it is useful because much is not said about Radioactivity in the Environmental Assessment Act of 2011. The EIA regulations (schedule 1, regulation 3) of 2012 have only 3 areas where radioactive is mentioned being:
  - **Extractive and associated industry** (a) (a) prospecting and exploration for oil, coal bed methane, and natural gas, heavy metals and radioactive minerals;
  - **Waste management** - (b) radioactive waste storage and disposal facilities;
  - **Infrastructure developments** - (aa) construction of facilities for storage of radioactive materials.
- The department is also reviewing the Act hence the need to align at BBS and GSG which can assist in the EIA process.
- Yes, it did. There is little knowledge about radioactivity in our department, the workshop provided BBS although there were mainly for medical and occupational safety.
- I did not see information of or guidelines how the occupational exposed workers should be protected especially in health. That is how often our dose meters should be read and what to do in case of over exposed other than writing incident report.
- The workshop helped with the interpretation of requirements and also highlighted the changes made from the previous BSS.
3. Have there been any actions initiated in your country after the workshop to improve the implementation of the requirements? Kindly explain which. If not, explain why not.

- The Radiation Protection Act and Regulations are being reviewed to include some of the missing items, since they were made basing on the old BSS.
- Meeting to discuss documents on emergency preparedness and drilling of national first responders.
- Meeting with interested parties on how to proceed further with the identification of existing exposure situations.
4. Any other comments?

- Some presenters were too fast. It would help if materials were given in advance to study and discuss later.
- Ensure that RPI and its mandate are well known as they are crucial for the country. There is need for a strong outreach programme which raises awareness to different audiences.
- There is need for RPI to establish a working relationship with the Ministry of Environment, Natural Resources Conservation & Tourism (MENT) departments especially Department of Environmental Affairs (DEA) and Department of Waste Management & Pollution Control (DWMPC). They are using Acts that have regulation on Radiation.
- Since our department is small there is need to use different forms (television newspapers, radios, social media) to raise awareness to the general population.
- RPI should also cooperate with other departments that deal with radioactivity such as Department of Mines. I wish this kind of workshop should be extended to policy makers that is ministry management especially ministry of health. A workshop like this should be arranged for medical doctors in the hospitals.
Thank you!