

DEVELOPMENT OF TECHNICAL CAPABILITIES FOR SUSTAINABLE RADIATION AND WASTE SAFETY – RAF/9/029

STATUS OF RESOURCES AND SERVICES IN KENYA: A STAKEHOLDER'S VIEW

David M. Maina, Institute of Nuclear Science, University of Nairobi. e-mail: muchori27@yahoo.com,
Joseph A. W. Maina, Radiation Protection Board, P. O. Box 19841, 00202 Nairobi, Kenya. e-mail: rpbkenya@nbnet.co.ke, mainajaw@yahoo.co.uk

Abstract

Provision of radiation services and acquisition of radiation detection and measurement equipment in the country has been generally lacking dating as far back as 1995. During the period 1995 to present, Kenya's Regulatory Authority, the Radiation Protection Board (RPB) undertook to provide personal monitoring, quality assurance, radioanalysis among others. Over the years these services have stalled due to outdated equipment most of which have broken down. A maintenance and calibration service for nuclear equipment is an expensive issue. Staff retention has been declining over the years. However, the trend is reversing and stakeholders are taking increasingly active roles in sustainable national and regional resource and service development programmes.

Introduction

Nuclear applications in Kenya are on the increase in all major fields of socio-economic development. Provision of regulatory services, guidance and enforcement procedures, has also grown over the last fifteen years. However, staff retention is a critical issue where job opportunities, with relatively high incentives, are high either inside or outside the country. Human and equipment resource development has not kept pace and this has hampered effective and efficient provision of services. The poor status of the economy has had its impact on delivery of quality service.

Regulatory Authority

The Radiation Protection Board is the Regulatory Authority in Kenya. It is established by an Act (law) of Parliament promulgated in 1982. The Act was revised in 1985 [1] shortly before becoming operational in 1986. There was subsequent subsidiary legislation (Legal Notices No. 54 and 55 of 1986), which set procedures and standards mainly in the medical sector [2,3].

The Regulatory Authority is attached to the Ministry of Health. This parent Ministry runs the bulk of medical radiation facilities with the highest number of radiation workers. It is therefore expected that the Regulatory Authority face difficulties of a regulatory and enforcement nature in ensuring compliance with regulations and standards by the Ministry's radiation facilities.

The Authority has also published a revised draft of the Act which ensures autonomy, wider coverage of radiation practices and empowerment. Stakeholders have been involved in this process from the onset. The draft also addresses the principal requirements of the International Basic Standards (BSS)[4].

Legislation of regulations (legally binding guidelines) under the main Act, targeting specific practices should be a priority. Apart from the 1986 subsidiary legal notices, no other regulations have been gazetted.

Personal Monitoring

There are about 2,500 radiation workers in the country. Most of the workers work in well-established radiation facilities. However, there has been a general lack in provision of essential radiation safety services within such radiation establishments that have been licensed by the Regulatory Authority. Such services are personal monitoring, routine safety surveys, contamination and leak tests, among others.

There is a general belief that the Regulatory Authority has the obligation and responsibility of providing such services. The Radiation Protection Act provides that such services are the moral and legal responsibility of the licensee. Proper dissemination and enforcement procedures on provision of safety services should be established, published and executed by the Regulatory Authority.

Currently the Regulatory Authority, through its National Radiation Protection Laboratory (NRPL), provides Personal Monitoring services for about 300 medical radiation workers. The Ministry of Health has put in place film badge monitoring services for all government radiation workers while those in the private practice are either monitored (about 200) by private organizations or go without the service.

The Regulatory Authority has set up a central record keeping system for external and internal radiation dose. Stakeholders have come up in support of this move. Personal Monitoring and central record keeping are aimed to be self-sustaining services.

Equipment Calibration and Maintenance

Technical equipment (for radiation detection and measurement) have been provided through support from the International Atomic Energy Agency (IAEA).

Most radiation facilities do not have monitoring equipment. It is not enough for a Radiation Safety Officer (RSO) in a radiation facility to have a radiation monitor, whose readings cannot be independently verified. It is essential that such equipment be calibrated on a regular basis.

Calibration and maintenance of radiation detection and measurement equipment is coordinated by the Regulatory Authority. The services are sourced from the Secondary Standards Dosimetry Laboratory (SSDL) at Arusha, Republic of Tanzania. The Regulatory Authority also handled equipment maintenance services. However, with the advent of more modern equipment based on 'intelligent grains of sand' the service could not be sustained, as human resource development did not keep pace.

Cost of calibration and maintenance of equipment abroad may not be acceptable to decision makers of radiation facilities. Even government funding for the calibration exercise is delayed by 'red tape'. In addition long overland travel, as is the case in Kenya while submitting equipment to the SSDL in Arusha, through uneven roads and terrain, may not auger well for electronic equipment. Risk of loss or damage is high.

Such technical services should be provided by stakeholders, Non Governmental Organizations (NGOs) and International Organizations through accreditation. Incentives have to be provided and enforcement actions taken to ensure compliance.

Radioanalysis

A Multi-channel (3"x3" NaI(Tl) Crystal) gamma spectroscopy system belonging to the Regulatory Authority has been beyond repair for several years now. The Institute of Nuclear Science, University of Nairobi, is currently offering Radioanalytical services with the understanding of the Regulatory

Authority. The Institute uses a Hyperpure Germanium Detector system.

Other private organizations like the SGS (K) Ltd. supplement radioanalytical services. More equipment are therefore needed especially for regulatory and intercomparison purposes as well as decentralization of the services.

Human Resources and the ‘brain drain’

Kenya has placed the issue of human resource development high on her development agenda. Human resource development is a recurrent need for capacity building. In Kenya, as in most other member countries, the ‘brain-drain’ has been high and is clearly visible in the current number of Regulatory Authority’s technical staff – eight (8) only – with a higher number having left.

To address this issue government support has been provided to expand technical staffing of the Regulatory Authority with an initial recruitment of seven (7) technical staff. Other factors that impact on provision on competitive incentives, and staff retention, are being appropriately addressed. Concrete steps have to be taken to ensure staff retention.

Continuous emergence of nuclear applications, expansion and decentralization programmes, offer new job opportunities that require additional qualified and skilled staff. A pool of such qualified and skilled staff should therefore be established from which the government, the private sector and the international community can tap from. Of course the stakeholders would be obliged to provide support for such a pool. The IAEA has provided immense support in personnel training through training courses, workshops, scientific visits and international conferences.

Emergency Response

Most radiation facilities have, in principle, radiological emergency procedures in place. However, the Regulatory Authority, stakeholders and other government organs have not established a common national response procedure. A systematic approach to a national response plan is desirable. To this end, the Regulatory Authority should take the lead and enhance co-operation and co-ordination with stakeholders and other government agencies for capacity building in this area.

The Regulatory Authority also needs to have an inventory of available resources and be able to mobilize such resources to execute a National Response Plan.

Way Forward

That the Regulatory Authority needs to be independent cannot be overemphasized.

Regulatory responsibilities of a Regulatory Authority should be de-linked from provision of services and resources to licensees.

A national development strategy for human resources should be put in place and supported by an action plan to develop human resources for the present and future needs of the country.

Conclusion

It is evidently clear that in order for effective and efficient provision of regulatory services, current legislation on composition, legal empowerment, and independence of the Regulatory Authority should be revised, as an immediate need, so as to keep pace with the current trends in human resource development, provision of services, as well as enforcement activities, within the region and throughout the world.

In the provision of services and training of manpower resources, stakeholders – both national and international – should be fully involved to compliment efforts by the regulatory authority in building and maintaining an effective and efficient national infrastructure. To this end the regulatory authority should play the crucial liaison role to enhance cooperation and coordination in capacity building.

The regulatory authority should also make concerted efforts, involving stakeholders, in prioritizing service areas where technical equipment can be collectively acquired and shared at national, or even regional, level.

Binding action plans for development of sustainable resources and services should form the bond between the regulator and the stakeholder.

REFERENCES

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