Atomic Energy Board of Namibia

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ATOMIC ENERGY BOARD OF NAMIBIA

2009/2010 ANNUAL REPORT

REPUBLIC OF NAMIBIA

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Established Pursuant to Section 3(1) of the
Atomic Energy and Radiation Protection Act, Act No 5 Of 2005

ANNUAL REPORT

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Atomic Energy Board of Namibia – Annual Report 2009/2010

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Annual Report 2009/2010

Editor: Dr. WRS Swiegers

Members of the Atomic Energy Board of Namibia

1. Dr. Wotan Swiegers –
   Chairperson of the Board

2. Ambassador, Mr. Martin Andjaba
   nominated by Hon. Minister of Foreign Affairs

3. Dr. Chocky Shitaleni Herman
   nominated by Hon. Minister of Health and Social Services

4. Ms. Helena Itamba
   nominated by Hon. Minister of Mines and Energy

5. Mr. Ileni Shikwambi
   nominated by Hon. Minister of Labour and Social Welfare

6. Mr. Teo Nghitila
   nominated by Hon. Minister of Environment and Tourism

7. Ms. Martha Hitenanye
   nominated by the Director-General of the Namibia Central Intelligence Service

Secretariat: Mr. Axel Tibinyane

Director: National Radiation Protection Authority

Foreword by the Minister

Hon. Dr. R Kamwi, MP, Minister

Namibia has a long history of involvement in the use of sources of ionising radiation. These include the use of diagnostic x-ray facilities, diagnosis and treatment of certain conditions using radioisotopes and radiation sources. The local use of radiation sources has since expanded into other areas such as road construction, mining, education, food and agriculture; and various testing and analytical applications. It suffices also to mention that Namibia has a long history of uranium mining and in recent times there has been a remarkable upsurge in the uranium mining industry.

In many ways the use of radiation based technology provide justified benefits to Namibia and there is indeed a need to ensure that Namibia exploits the available nuclear technology to its fullest. We are also mindful of the deleterious effects associated with radiation and the need to establish mechanisms to ensure the adequate protection of our people and the environment. Our philosophy is to maximise on the benefits that nuclear technology has to offer and minimise the harm.

The Ministry has worked tirelessly to create the enabling environment that will ensure nuclear technology makes a meaningful contribution to socio-economic development while also ensure the protection of people and the environment. In this regard Government approved the National Radiation Protection Policy and this policy subsequently led to the enactment of the Atomic Energy and Radiation Protection Act in 2005. The Act creates the Atomic Energy Board which serves as an advisory body to Government on all matters relating to nuclear energy. I have inaugurated this Board in February 2009 and the members consist of representatives from the Ministries of Mines & Energy; Health and Social Services; Environment & Tourism; Labour & Social Welfare; and Foreign Affairs; while the Namibia Central Intelligence Service (NCIS)has been co-opted into the Board. The Act also creates the National Radiation Protection Authority to regulate all activities associated with radiation sources, nuclear and radioactive material. I am pleased to note that this organisation is now functional and tasked with the administration of the Atomic Energy & Radiation Protection Act, Act No 5 of 2005.

I believe that the foundation has been established for the implementation of the Act and I urge both the Atomic Energy Board and the National Radiation Protection Authority to work with dedication and diligence towards achieving the objects of the Act.

Dr. Richard Nchabi Kamwi, MP
MINISTER

Mandate

The Atomic Energy Board was constituted on February 18, 2009 by the Hon. Dr. Richard Nchabi Kamwi, Minister of Health and Social Services by exercising the powers conferred by the Atomic Energy and Radiation Protection Act (Act no 5 of 2005).

Vision

Our vision is the long-term management of Namibia's nuclear and radioactive materials in a manner that safeguards people and respects and protects the environment, now and in the future.

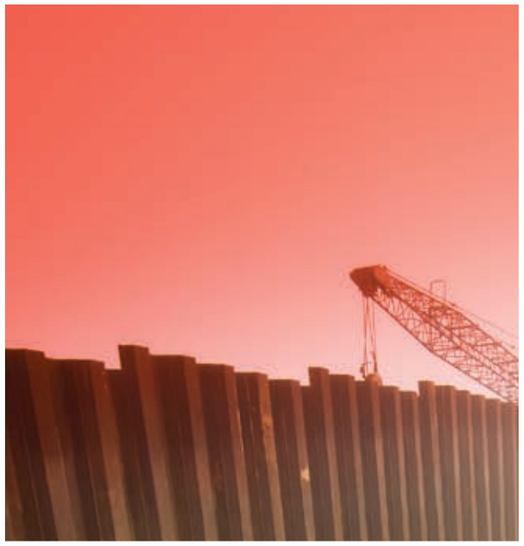
Mission

The mission of the AEB is to ensure; that through the provision of appropriate advise, the use of radiation and nuclear energy in Namibia does not cause unacceptable impact on the health of workers, members of the public and on the environment.

Values

The fundamental beliefs that guide us in our work include:

- **Integrity**
  We will conduct ourselves with openness, honesty and respect for all persons and organizations with whom we deal.
- **Excellence**
  We will pursue the best knowledge, understanding and innovative thinking in our analysis, engagement processes and decision-making.
- **Engagement**
  We will seek the participation of all stakeholders of interest and be responsive to a diversity of views and perspectives. We will communicate and consult actively, promoting thoughtful reflection and facilitating a constructive dialogue.
- **Accountability**
  We will be fully responsible for the wise, prudent and efficient management of resources, and be accountable for all our actions.
- **Transparency**
  We will be open and transparent in our advisory functions.



Activities of the Atomic Energy Board

1. Introduction

Dr. Wotan Swiegers, the chairperson of the Atomic Energy Board of Namibia emphasizes that the IAEA's slogan "Atoms for Peace" is a call to apply nuclear technology to the benefit of mankind. No country should be denied its inalienable right to develop its nuclear technology for peaceful purposes but it goes hand in hand with comprehensive safeguards with non-proliferation and nuclear disarmament an obligation to us all. Only adherence to universal standards will guarantee the safety and security of our planet, our citizens and our environment.

The main purpose of the Atomic Energy Board is to recommend approaches which will ensure that the benefits of nuclear technology are fully exploited, whilst ensuring that it is properly controlled. Namibia continues to cooperate with the International Atomic Energy Agency.

One of the main challenges of the Atomic Energy Board is how to assist with the formulation of a national policy on nuclear energy amidst anticipation that uranium exploration and mining will increase in the next few years. The Board must also create awareness amongst Namibians on the benefit of nuclear energy and the risks and potential impact on health.

2. Mandate

The Atomic Energy Board was established on 18 February 2009 in fulfilment of Section 3(1) of the Atomic Energy and Radiation Protection Act, 2005 (Act No 5 of 2005). The primary purpose of the Board is to advise Government and relevant persons or entities on all matters relating to radiation sources and nuclear energy. The Act requires that an annual report must be prepared for each period starting on the 1st of April and ending on the 31st of March in the following year. This report is thus prepared in pursuant to this requirement and includes activities of the Board and the National Radiation Protection Authority, which is charged with the administration of the same Act.

Dr. Wotan Swiegers

3. Establishment of the Atomic Energy board

Pursuant to Section 3 of the Atomic Energy & Radiation Protection Act, Act No 5 of 2005 the Hon. Minister of Health and Social Service, Dr. Richard Nchabi Kamwi, appointed the members of the Board for a period of three years starting from 18 February 2009. Composition of the Board consists of representatives from the Ministries of Mines & Energy, Environment & Tourism; Labour & Social Welfare; Health and Social Services; Foreign Affairs and the Chairperson who is a private individual.

4. Meetings of the Board

During the reporting period the Board held six (6) meetings, including the first meeting which was chaired by the Honourable Minister of Health and Social Services after the inauguration of the Board on 18 February 2009. The Board concluded the period under review with its strategic planning meeting where it formulated its strategic statements.

5. Secretariat and staff of the Board

During the period February to September 2009 the Atomic Energy Board secretarial support was provided by the Subdivision: National Radiation Protection Services in the Directorate: Primary Health Care. Subsequent to the appointment of the Director of the National Radiation Protection Authority in October 2009 and in line with Section 13(1) of the Act, the Director became Secretary of the Board.

The Division Nuclear Applications in the Directorate Atomic Energy and Radiation Protection Regulator has been designated to perform the work of the Board in line with Section 14 of the Act. Progress is underway to fill existing vacancies in this division.

6. Operationalisation of the Atomic Energy & Radiation Protection Act

At its third (3rd) meeting the Board decided to advise the Honourable Minister to bring the Atomic Energy & Radiation Protection Act into operation in line with Section 47(1). Subsequently the Ministry gave instruction to the Ministry of Justice to gazette the Operationalisation of the Act as of the first of August 2009. However the legal drafter advised that the operationalisation of the Act should wait for the finalization of the regulations. Notwithstanding the operationalisation of the Act, all decision taken in respect of the implementation of the Act remain legal.

7. Policy Framework on Nuclear Energy Applications

In order to formulate its position regarding its mandate, especially in the context of Section 3(1) of the Act which states that '....the Board is a national advisory board on all matters relating to radiation sources and nuclear energy....', the Board deemed it fit to develop a policy that will articulates its position on specific nuclear energy issues. Thus on instruction of the Board, the Secretariat has drafted a policy framework on matters relating to nuclear energy which has yet to be scruntinised by the Board. In this respect the Board has decided at its fifth (5th) meeting to consult broadly with stakeholders for the purpose of gaining insight into the policy direction on important aspect of nuclear energy. The same consultation process will also provide the opportunity to create the necessary awareness among stakeholders on the mandate and functions of the Board. This undertaking is to be accomplished during the next financial year.

8. Important Decisions of the Board

During the reporting period, the Board deliberated on a number of issues, which are summarised below:

8.1. Additional Protocol to the Safeguards Agreement

Pursuant to Section 8(i) of the Act the Board considered the Additional Protocol to the Safeguards Agreement and decided to advise that the Hon. Minister submit to Cabinet and tables in Parliament the approval of the Additional Protocol to the Safeguards Agreement. The Model Additional Protocol provides the means by which the IAEA not only verifies the non-diversion of declared nuclear material, but also gives assurances as to the absence of undeclared nuclear material.

Under the Safeguard Agreement any export or import of source material such as yellowcake is reported to the IAEA annually. However with the ratification of the Additional Protocol, Namibia is required to provide information specifying the location, operational status, and the current and estimated annual production capacity of uranium mines and concentration plants for the State as a whole.

The Government hosted the IAEA Safeguard inspectors on 28 April 2010 at the Ministry of Mines & Energy. Participating in the meeting with the inspectors were officials from the Ministries of Mines and Energy; Health and Social Services; Atomic Energy Board and some of the Uranium Mining Companies. The IAEA was presented with an overview of the current and future prospects of the uranium industry. The meeting concluded with discussions between the Government and the IAEA on how to improve the bilateral mechanism to ensure that Namibia fully meets it obligations under the Safeguards Agreement.

8.2. Committees of the Board

The Board considered the terms of reference of two committees which pre-dates the inauguration of the Board. These include the Nuclear Security Committee and the National Cancer Control Committee. In its conclusion the Board opted to formalize the Nuclear Security Committee as one of its committees, subject to alignment of the Committee's terms of reference with the Board's mandate and requirements under Section 10 & 11 of the Act.

8.3. Membership to the Atomic Energy Board

Following extensive consultation with the office of the Hon. Minister it was concluded that representation from the national security fraternity is of vital importance on the Board. Hence in conformity with Section (9) of the Act the Board decided to co-opt a member from the Namibia Central Intelligence Service as a member of the Board.

8.4. Strategic Environment Assessment in the Erongo Region

The Board acknowledges that the current upsurge in uranium mining will have significant impact for Namibia and it should be ensured that the country establishes and maintains a good record of responsible uranium production. In this context it is important that the negative impacts associated with the uranium mining industry be kept to a minimum while maximize on the potential benefits thereof. It is for this reason that the Board has resolved to partner with stakeholders in the current Strategic Environment Assessment and more so with the implementation of the Strategic Environment Management Plan.

9. Regulations in Connection with the Atomic Energy & Radiation Protection Act

In line with its mandate to recommend regulations to the Minister as contemplated under Section 43 of the Act, the Board took note of the draft regulations for protection against ionizing radiation, which have been submitted to the Government's legal drafters for scrutiny. While the Board appreciate that the IAEA and some local stakeholders had made input to the current draft, it recognize that further consultation may be necessary before gazetting the regulations and the subsequent operationalisation of the Act.

In the opinion of the Board the current draft regulations are comprehensive, addressing general issues relating to radiation protection and waste management.

However there are some important issues that should be addressed under the current or separate regulations such as requirements relating to security; extraction and processing of ores; nuclear material accountancy; fees payable in respect of acts performed by the authority; decommissioning of facilities; and non-ionizing radiation sources.

10. Promotion of Peaceful Uses of Atomic Energy And Related Research

The Board notes with appreciation the participation by various Ministries and Institutions in the IAEA technical cooperation programme. During the period under review the Chairperson of the Board was afforded the opportunity to accompany the Namibian delegation to the IAEA General Conference in September 2009. The Board also takes note of the general concern about the low implementation rate of projects supported by the IAEA. The Board has yet to deliberate on how best to contribute to the improvement in this area and to ensure that the use of nuclear technology is enhanced, especially within the context of the existing cooperative and coordinating mechanisms between the IAEA and the Ministry of Health and Social Services and other institutions.

The Board notes that Namibia implemented four national projects and participated in about thirty regional projects under the auspices of the IAEA. These projects ensure that nuclear technology contributed meaningfully to areas such as public health, animal health, water resource management, crop production, uranium mining, energy planning and regulatory infrastucture applicable to the use of nuclear technology.

11. Capacity Building for Radiation Safety

The Board has started initiatives to build the necessary capacity to ensure that licensees are appropriately equipped to fulfil the legislative requirements. This includes providing advice to licensees on the appropriateness or competencies of radiation safety officers in line with Section 8(c) and 30(1) of the Act. In this regard the Board considered the radiation safety training course initiated by the Uranium Institute which aims to train radiation safety officers for the uranium mining industry. This course started in March 2010 and is expected to be complemented with two additional sessions. While the Board is in full support of the training course, it acknowledges that some adjustment may be necessary in future and that it should be accredited by the National Radiation Protection Authority.

12. Public and Regulatory Information

The Board notes its responsibility to advice on the mechanisms necessary to inform the public about the regulatory processes and radiation safety aspects. In this regard the Board has approved the establishment of a website which will give access by the public and operators to information relating to protection against radiation and requirements for authorization of practices involving radiation sources.

13. Future Priority Undertakings

The Board intends to prioritize the development of its policy framework as a basis for all future work under its mandate. This policy will define the basis for engagement with national and international institutions on how the Board will cooper or collaborate in the area of peaceful applications of nuclear technology and related safety and security measures.

The other pertinent issue to address in the near future is to assess the current legislative and regulatory framework against international standards and to make appropriate recommendations in this respect.

Activities of the National Radiation Protection Authority

14. Introduction

Mr. Axel Tibinyane was appointed as the Director of the National Radiation Protection Authority and by virtue of this appointment he also serves as Secretary to the Atomic Energy Board of Namibia. As Director of the Authority he has overall responsibility to oversee the administration of the Atomic Energy and Radiation Protection Act and regulations, manage the radiation regulatory body to ensure nuclear related applications are conducted in accordance with the statutory requirements and Government policy. As Secretary to the Board he is required to provide authoritative and independent scientific and technical advice to the Board in as far as it concern the beneficial and peaceful application of nuclear technology with due consideration to safety and security issues.

15. Establishment of the National Radiation Protection Authority

Section 33(1) of the Act No. 5 of 2005 establishes an independent National Radiation Protection Authority, which consist of its Director and staff appointed by the Minister on recommendation of the Public Service Commission. The current challenge is to ensure that the institutional arrangements such as organizational arrangements, funding, operational and reporting mechanisms are streamlined to give the meaning to the effective independence to the Authority as a Regulator instead of a Directorate in the Ministry.

16. Staff of the National Radiation Protection Authority

The Directorate Atomic Energy & Radiation Protection Regulator was established to administer the Atomic Energy and Radiation Protection Act and its Director has been designated as head of the National Radiation Protection Authority. The Director and staff of the Authority are charged with the administration of the Act Sect.33 (1).

Mr. Axel Tibinyane

17. Strategic Direction of the Regulatory Authority

The Authority formulated its strategic direction with due regard to the strategic plan of the Ministry of Health and Social Services. The key strategic statements of the Avuthority are summarized below.

Vision

To be the competent national regulatory authority for nuclear and radiation safety and security, consistent with international standards and best practices

Mission

To provide for the adequate protection of the environment and of people in current and future generations against the harmful effects of radiation

Values

Confidentiality, empathy and caring, honesty, integrity and dignity, impartiality, professionalism, respect

18. Legislative and Regulatory Framework

The Atomic Energy and Radiation Protection Act is the basis for regulatory work involving radiation sources, nuclear and radioactive material. The operationalisation of this Act is subject to the finalization of the draft regulations which are currently under review by the legal drafters. Therefore the Hazardous Substance Ordinance, 1974 (Ordinance No 14 of 1974) is still applicable and form the basis for current authorizations.

19. Transitional Matters

While the Hazardous substance ordinance, 1974 (Ordinance No. 14 of 1974) provides the current basis of permitting certain practices and activities, the Authority has recognized the need to ensure a smooth transitional phase after the operationalisation of the Act. Therefore all attempts are made to model the current regulatory work around the Act and draft regulations in preparation for the operationalisation of the new legislative framework.

20. Regulatory Approach

The new legislative framework has a number of requirements with which applicants must comply with, including those stipulated in the Act and under the draft regulations. In an effort to streamline the applications and review process the Authority has issued a guideline that will assist applicants to compile a Radiation Management Plan in support of an application for a registration, license or authorization. Applicants are required to develop and when approved implement their respective radiation management plan, which is expected to be in compliance with all requirements defined in both the Act and the regulations.

21. Register of radiation sources

The Authority keeps and maintains a database for radiation sources and facilities, called the Regulatory Authority Information System (RAIS). While the database is estimated to be complete there are a few challenges such as inclusion of operators performing mining and exploration work and there might be some operators utilizing sealed source in industry without authorization. All efforts are being made to setup the current database on the local area network on a trial basis with the intention to launch a web-based database.

22. Inspection and Licensing of facilities and activities

In fulfilment of its key mandate the Authority regularly inspects a number of facilities and radiation sources to assess compliance with the current law and draft regulations for the purpose of registering and or licensing these radiation sources and activities. The radiation management plans and inspections are key tools in the assessment of operations involving radiation sources, nuclear or radioactive material.

While the Authority is fully equipped and capable to inspect radiation sources in the medical and industrial sectors, the challenge remain to build the same capacity for the uranium mining sector. The expertise for inspection in the uranium mining industry together with the review of the radiation management plans will be key priorities in the coming years if the mandate of the Authority is to be executed effectively.

23. Extent of Radiation Exposure in Namibia

One of the functions of the Authority is to inform the Board about the extent of radiation exposure in Namibia. The target of the assessment of radiation exposure includes exposures to the radiation workers, patients, public and the environment, which are summarized below.

23.1. Occupational Exposure

A number of workers are exposed to radiation as consequence of the nature of their employment. These include workers in the medical sector, mining and industrial sectors where radiation is generated as a result of authorized activities and radiation sources. Currently over 200 radiation workers are under routine radiation surveillance. The challenges in this area is to create a single and centralized radiation dose register which includes all workers in the public and private sector. Furthermore the priority initiative in the next financial year is to strengthen the technical capacity of the radiation surveillance programme by procuring an additional reader and cards to enable an expansion of the service to the private sector.

23.2. Patient exposure

It is important to ensure that the patient exposure are optimized to ensure that the optimal image quality is obtained or the target dose for treatment is optimized without causing unnecessary exposure to the patient. Therefore during inspections the performance of x-ray units and treatment units are assessed to ensure that the units operate within pre-defined parameters. While it is noted that most units operate within acceptable operational parameters, it is still necessary to quantify the exposure level, especially in the case of interventional radiology and CT where it is reported that doses could be significantly high. Thus the future undertaking will be to strengthen this area of medical application to ensure that appropriate quality assurance programme are implemented

23.3. Public exposure

The extent of radiation exposure to the public is not well documented and in recent times various institutions have embarked upon determination of radioactivity levels in the environment. The Authority has not given adequate attention to this area in the past, owing mostly to poor capacity and capability, in terms of equipment and skills. However efforts are underway to establish the extent of radiation exposure to the public such as radon exposure in homes and gamma radiation in the environment. Another important area to be addressed as a matter of priority is the development and implementation of radioactive waste management strategies. Equally important and to be prioritized is the determination of radioactivity levels in food stuffs and elemental analysis using nuclear techniques.

24. Capacity building

During the period under review various capacity building initiatives were undertaken to strengthen the skill and knowledge base of staff of the Authority and stakeholders involved in matters related to regulation of radiation source. This includes participation in workshops on the following topics nuclear security, emergency response and preparedness, design basis treat; and Natural Occurring Radioactive Material (NORM).

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