

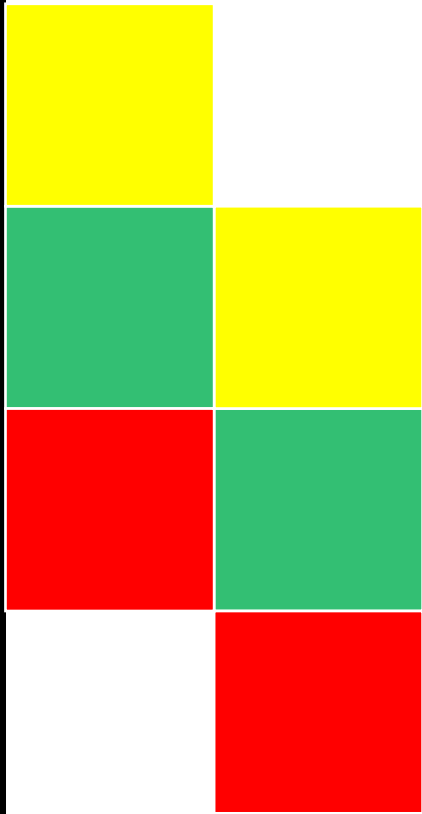


**THE REPUBLIC OF THE UNION
OF MYANMAR**

NATIONAL REPORT

**For the 9th Review Meeting of the
CONVENTION ON NUCLEAR SAFETY**

March 2023



This report has been prepared by the Government of the Republic of the Union of Myanmar in accordance with Article 5 of the Convention on Nuclear Safety for submitting to the 9th Review Meeting of Contracting Parties to be held in March 2023.

March 2023

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I. INTRODUCTION

Myanmar is a founding member state of the International Atomic Energy Agency (IAEA) since 1957 and aware of the importance of nuclear safety while attempting to achieve social and economic goals of sustainable development with all possible ways including the use of nuclear energy for peaceful purposes. Therefore, Myanmar acceded to the Convention on Nuclear Safety (CNS) on December 6, 2016.

Myanmar is a country with no nuclear installations as defined in the CNS and has a small number of activities related to ionizing radiation, which is why the use of radioactive material and sources of ionizing radiation is limited to Medical, Agricultural, Veterinary, Industry, Education and Scientific-research activities. The total quantity of disused radioactive sources in Myanmar is very small due to legally controlled import, possession and use of sources of radiation which constitute radioactive waste upon expiry period and it will be returned to the supplier outside Myanmar. Regardless of the relatively low activity and a small quantity of disused radioactive sources, a central storage facility for management of radioactive waste exists in Myanmar.

As obligations reported in the section III, Myanmar has shown improvement in transparency as regards nuclear activities; Myanmar fulfilled international and regional commitments and responsibilities by acceding to several international and regional legal instruments in the areas of nuclear safety, security and non-proliferations. For creating a positive public perception of nuclear energy while ensuring safety and security of the people, Myanmar government perceived such situation that public awareness in the nuclear field will be required by direct public communication channel. The DAE has launched a website in which all necessary information is made available. (<http://www.daemyanmar.com>).

The third National Report is aimed at demonstrating that Myanmar is fully committed to fulfilling the obligations resulting from the Convention on Nuclear Safety. National Report is organized by following the set format and the structure given in guidelines INFCIRC/572/Rev.4.

II. SUMMARY

As IAEA member state, Myanmar committed peaceful use of nuclear energy and focuses on improving safety, security and safeguard regimes as well as the response on emergency preparedness. The protection of human life and the environment, against harmful effects of ionizing radiation, radioactive waste management, nuclear safety and security are important activities of the Government of the Union of Myanmar. Myanmar is being party to the treaties, conventions and agreements related to peaceful use of nuclear energy and has also expressed a political commitment with regards to IAEA code of conduct on Safety and Security of Radioactive Sources.

The Department Atomic Energy is making all-out effort to establish independent nuclear regulatory body so as to move forward as a competent regulatory body by ensuring the highest

levels of nuclear safety, nuclear security and safeguards.

Establishment of legislative framework and regulatory framework within Myanmar, nuclear safety, security and adequate radiation protection of the radiation workers and the environment against the harmful effects of ionizing radiation, have already been ensured. Atomic Energy Law was enacted in 1998 and the new nuclear law is in the progress of drafting with the aim of possessing legislations strengthening nuclear safety, security and non-proliferation.

III. OBLIGATIONS OF CNS

Article 7: Legislative and Regulatory Framework

7.1 Legislative Framework

The Atomic Energy Law, which was promulgated on 8 June 1998, adopted within Myanmar, delegated two main responsibilities to the Department of Atomic Energy (DAE), namely, **promotion** of the utilization of nuclear technology for the benefit of the people of Myanmar and **regulatory control** for the protection of workers engaged in using radiation and radioisotopes and the public from harmful effects of ionizing radiation. According to this law, the Atomic Energy Council was established. However, the new Nuclear Law is in the progress of drafting under the IAEA legislative assistance programme with the aim of possessing legislations strengthening nuclear safety, security and non-proliferation more than before while some of the legislative and regulatory measures are still under development. The Myanmar legislative framework consists of laws adopted within Myanmar, international conventions and legal instruments, and bilateral agreements with one of the IAEA member state as follows:

7.1.1 Laws of Myanmar related to Nuclear Energy

- **The Atomic Energy Law**, Law No.8/98 of 1998 for encouraging the peaceful uses of atomic energy with provisions to prevent the effects of radiation hazard on human beings and the environment; this law came into force on 8 June 1998.
- **Science, Technology and Innovation Law**, Myanmar's new Science, Technology and Innovation Law (No. 22/2018) (the Law) was enacted into law on June 25, 2018. The Law, which repealed the old Science and Technology Development Law (No. 5/1994), is set to introduce substantial changes to collaborative innovation practices in the country.
- **Environmental Conservation Law**, Law No.9/12, 2012, aimed at development of a healthy and clean environment, conservation of natural and cultural heritage for the benefit of present and future generations, and provision of a system of environmental impact assessment which shall require any proposed project or business or activity or undertaking in Myanmar by any ministry, government department, corporation, board, development committee, local authority, company, cooperative, institution, enterprise, firm or individual; this law came into force on March 30, 2012.
- **Counter Terrorism Law, 2014** (Law No.23/2014), concerning anti-terrorism including also nuclear terrorism, which adopted on June 4, 2014.

- **The Myanmar Mines Law (1994) (Law No.8/94)** is concerning the Mineral Resources. This Law comes into force on 6 September 1994.
- **Natural Disaster Management Law (Law No. 21/2013)** which is concerning the Natural Disaster Management in Myanmar. This Law comes into force on 31st July 2013.
- **Electricity Law 2014**, (Law No. 44/2014) which is concerning the provision of access to electricity for the economic and social development of the country. This Law comes into force on 27 October, 2014.

7.1.2 International and Regional Legal Instruments

Myanmar has improved transparency as regards all nuclear related activities, and fulfilled international and regional commitments and responsibilities by acceding to the following relevant international and regional legal instruments in the areas of nuclear safety, security and safeguards:

Safety:

- Convention on Nuclear Safety, acceded on December 6, 2016
- Convention on Early Notification of a Nuclear Accident, acceded on December 18, 1997
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, acceded on October 4, 2022.

Security:

- Convention on the Physical Protection of Nuclear Material acceded on December 6, 2016 and its amendment ratified on December 6, 2016.
- Myanmar has already expressed political commitment to Code of Conduct on the Safety and Security of Radioactive Sources (INFCIRC/663)

Safeguards:

- Treaty on the Non-Proliferation of Nuclear Weapons, acceded on December 3, 1992
- Comprehensive Nuclear Test Ban Treaty, signed on November 25, 1996 and ratified on September 21, 2016
- Comprehensive Safeguards Agreement and Small Quantities Protocol, entered into force on 20 April 1995
- Additional Protocol, signed on September 17, 2013
- Treaty on the Prohibition of Nuclear Weapons (TPNW), signed on September 26, 2018
- Southeast Asian Nuclear-Weapon-Free Zone Treaty, SEANWFZ ratified on July 17, 1996

7.1.2 Bilateral Agreement

As both Myanmar and Russia are interested in establishing bilateral cooperation in the field of peaceful use of nuclear energy in medicine, biology, geology, agriculture, industry, environmental and scientific research, and electric power generation, Ministry of Science and

Technology of the Republic of the Union of Myanmar and the State Atomic Energy Corporation (ROSATOM) of the Russian Federation had already signed “MoU on Cooperation in the Field of the Use of Nuclear Energy for Peaceful Purposes” in 2015, “MoU on cooperation in training and skills development in the field of nuclear energy in the Republic of the Union of Myanmar” and “MoU in the field of shaping positive public opinion on nuclear energy” in 2022. Moreover, the intergovernmental agreement (IGA) between Myanmar and Russia on cooperation in the field of the use of nuclear energy for peaceful purposes had been signed on February 6, 2023.

Under the Country Program Framework with the agency the technical cooperation project was initiated on strengthening radiation safety infrastructure, which contributed to the country’s capabilities in enhancing knowledge on radiation and waste safety infrastructure, including the safe uses of radiation sources in Myanmar.

Myanmar is a member of the ASEAN Network of Regulatory Bodies on Atomic Energy (ASEANTOM) and cooperation with ASEANTOM to enhance regulatory activities and strengthen nuclear safety, security, and safeguards within the ASEAN Community. Myanmar is also participating Nuclear Energy Cooperation Sub-Sector Network (NEC-SSN).

7.2 Regulatory Framework

The DAE functions as the national regulatory authority on use of radiation and radioisotopes whereas in fact it works as the national organization responsible for facilitating the use of nuclear technology in medical, agricultural, veterinary, industrial, environmental and education sectors in addition to serving as a focal point of the IAEA in Myanmar.

7.2.1 National Safety Requirements and Regulations

The National Legislative requirement on nuclear and radiological safety for all activities related to the peaceful use of atomic energy in Myanmar stems primarily from the Chapter 7, 8, 12 of the Atomic Energy Law (8/1998) that imposes restrictions on certain activities without having appropriate form of authorization by the Atomic Energy Committee. DAE, by exercising powers under Chapter 6 of the Law, is the competent authority in Myanmar to ensure the compliance of nuclear safety in any radiation practices. Moreover Section 16 of the Chapter 7 gives DAE the power to make regulations on the requirements of nuclear safety. The Chapter 12 of the Law explicitly states Prohibitions on utilize, produce, store, distribute or sell, import or export, possession of nuclear material, radioactive material or irradiation apparatus and those of determined by the Department as being not suitable for further utilization or retention. Atomic Energy Law continue to be in force until comprehensive and detailed **Nuclear Law** are in place. Furthermore, a number of regulations namely Nuclear Safety Regulation, Nuclear Security Regulation and Safeguards Regulation will follow.

7.2.2 System of Licensing

The Chapter 7 and 8 of the Atomic Energy Law gives authority to DAE for receiving registration by applicant who intends to utilize, produce, store, distribute or sell nuclear material, radioactive material or irradiation apparatus and others related to nuclear field, and for practicing any of the

regulated activities in Myanmar. After registration is complete, there is a process of reviewing and scrutinizing such applications under section 17 of the Atomic Energy Law in accordance with the stipulations to permit or to refuse issuing the licensee. If detailed evidence of safety on registered matter can be approved, issuing licenses and imposing conditions on licenses to be in line with established procedures are performed. The current licensing system does not provide for involvement of the public or interested parties when applications for new licences are being assessed by the DAE, the majority of which are typically X-ray equipment.

Radioactive sources, in Myanmar, are used in medical, agricultural, veterinary, education, industrial and environmental and all radioactive sources are imported. Currently all users of sources of ionizing radiation must hold a licence from the DAE and, in addition to adhering to statutory requirements laid down in the Atomic Energy Law, comply with the licence conditions pertaining to the activities for which the licensee is licensed for. For all radioactive sources which are return back to original countries have to get the lincence for re-export from DAE. The DAE has lunched all necessary information for licensees and radiation workers which are available on its website (<http://www.daemyanmar.com>) and they can apply the licence through online. DAE is collaboration with Ministry of Commence and the information for licencing can have the National Trade Portal.

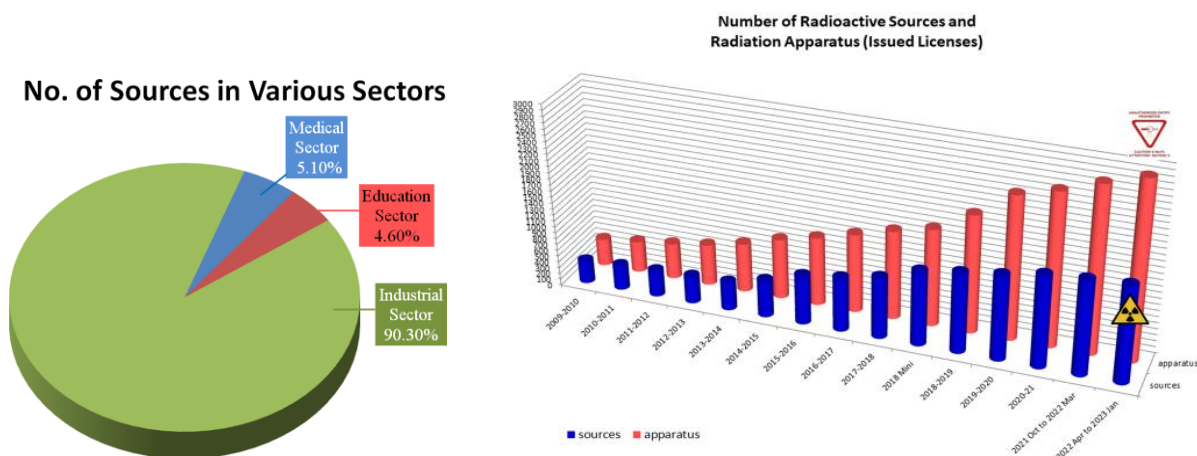


Figure 7.1 – Number of license issues for each fiscal year

At the end of January 2023 there were about 643 active licenses across all sectors, as illustrated in Figure 7.1. The industrial (well logging) sector makes up 90% of the licenses issued, followed by the Healthcare services sectors at 5% respectively. Failure to comply with a licence condition is an offence which could lead to prosecution. In addition, the custody and/or use of a source of ionizing radiation in the absence of a licence issued by the DAE is also an offence that can lead to a prosecution.

7.2.3 System of Regulatory Inspection and Assessment

As a regulatory authority DAE carries out inspection includes announced, unannounced and Ah-hoc inspections to the specific practice. Regulatory Inspection is one of the main responsibilities and functions of the DAE. The Regulatory inspection and assessment process guarantees compliance of the authorization holder/licensee with the safety provisions. Inspectors are engaged in all regulatory activities in addition to inspection, including licensing, drafting guidance documentation, radioactive waste management, management of Radiation Protection officer training courses, and technical advice. DAE has developed a “standard operational procedures (SOP)” for Inspection of Radiation Sources.

Before the Covid pandemic the DAE has the resources to undertake radiological inspections more than 300 per year and the number of inspections undertaken in a given year is based upon a risk analysis. Most inspections are announced in advance but a number of unannounced inspections also take place each year. Inspection is carried out according to international standards. Regarding implementation of corrective actions identified during an inspection, the Inspection Report is issued to licensee within four weeks of the date of the inspection and this includes a response date of four weeks by which the licensee must provide a written response to the report.

7.2.4 Enforcement

There are enforcement actions taken by the DAE such that administrative actions and appeal such as corrective actions, prohibitions, written warnings, revocation of a license and penalties as described in the Atomic Energy Law.

Article 8: Regulatory Body

8.1 Establishment of the Regulatory Body

According to Chapter III of the Atomic Energy Law the Atomic Energy Council has been established to laying down the policy and giving guidance in respect of having necessary controls in utilizing atomic energy. The mission is to authorize and regulate the sources of ionizing radiation and the use of nuclear energy in Myanmar to ensure adequate protection of workers and public health and the environment and giving guidance for dissemination of knowledge relating to effects of atomic energy among the public.

8.2 Status of the Regulatory Body

The Ministry of Science and Technology has been reinstated in 2021 and DAE is reorganized with seven departments. The DAE continues to act as the focal point of interaction with the IAEA and oversees the task of developing and promoting the peaceful applications of nuclear technology, under appropriate radiation protection and nuclear safety regimes, for the benefit and welfare of the peoples of Myanmar. Radiation and Nuclear Safety Division is to register of radiation sources and radiation apparatus, to issue license for radiation sources and radiation apparatus, to inspect of radiation sources and radiation apparatus.

Organizational Structure of DAE

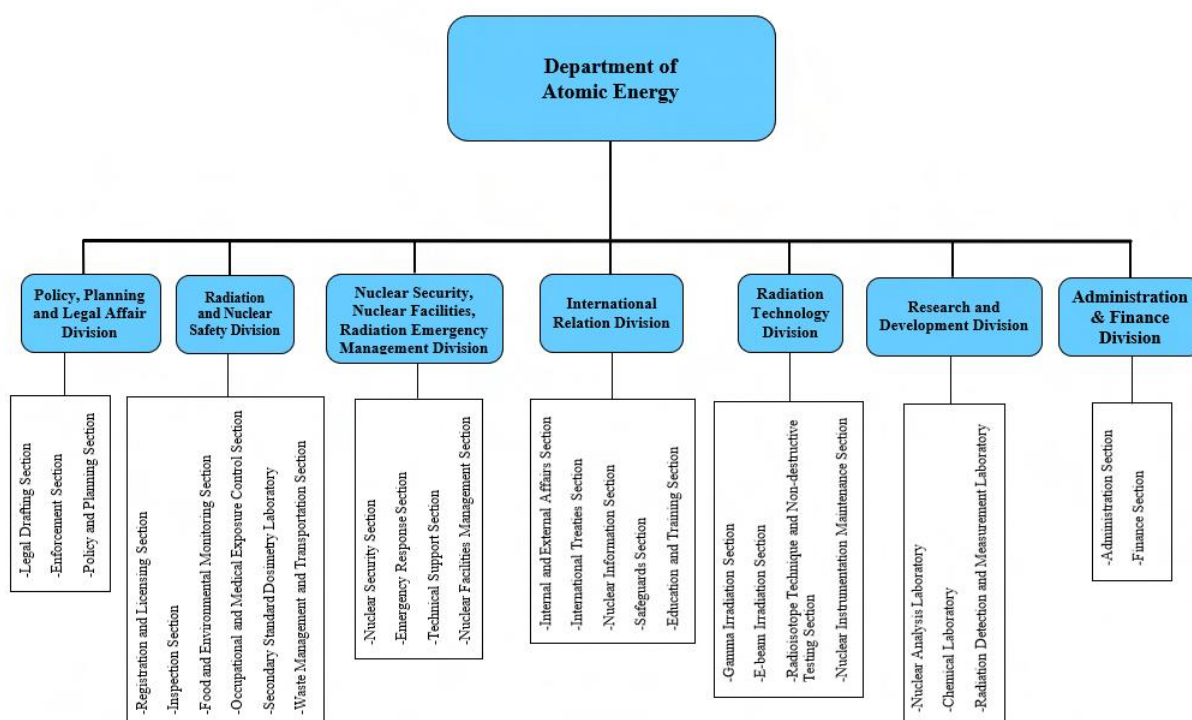


Figure 8.1 Structure of Department of Atomic Energy

Article 9: Responsibility of the Licensee Holder

Myanmar does not have any nuclear installations now. However, it shall be the primary duty of the licensee to establish and implement the technical and organizational measures required for the protection of human and the environment against harmful effects of ionizing radiation and to ensure the safety and security of radioactive sources authorized to be used under the licence.

The main responsibilities of the licensee are the following:

- To carry out only the acts or operations determined in the licenses
- To have, as required by the regulatory body, the number of authorized personnel to work in each practice, laboratory or nuclear equipment.
- To provide the necessary means for temporary storage of the radioactive waste.
- To prepare and maintain emergency plans revised and approved by the regulatory body, for nuclear accidents that could happen in its facilities.
- To prevent the illicit trafficking that could derive from theft, robbery or loss of unclear substances.

Article 10: Priority to Safety

Myanmar has no nuclear installations and therefore nothing to report under this Article.

Article 15: Radiation Protection

The main objective of the existing Atomic Energy Law is to ensure safety in utilization of atomic energy in the State and to lay down and carry out measures for prevention of atomic radiation effects on radiation worker, patients, public and environment. In this regards, ionizing radiation in the workplace is regulated by the Atomic Energy Law. The order applies to all practices which involve a risk of exposure to ionizing radiation. Under this order the DAE has responsibility for licensing and regulating sources of ionizing radiation. DAE practices and follows basic safety standards of IAEA, for the protection of the health of workers and the general public against the dangers arising from ionizing radiation. Licensing and inspection practice can assess the level of radiation protection in place at each licensed practice and to encourage licensees to strive to attain the best practice in relation to radiation protection.

In order that the individual dose limits on effective dose for exposed workers recommended by the International Commission for Radiation Protection (ICRP) are not exceeded, each individual radiation worker at hospitals, departments, companies and clinics has been requested to wear the personal monitoring dosimeter that measures ionizing radiation exposure for 2 months as monitoring period. The measured dose for each worker was recorded to take the necessary action if they being exposed overdose.

Article 16: Emergency Preparedness

As a member of ASEAN Network of Regulatory Bodies on Atomic Energy (ASEANTOM), Myanmar also actively participating for the implementation of the IAEA and EU regional projects to support the development of a regional environmental radioactivity database and a nuclear emergency preparedness and response framework in Southeast Asia. The projects are intended to culminate in more harmonized emergency plans and response measures between ASEAN member states, while cooperating with international partners in nuclear issues. The emergency response section of DAE has involved the exercises of the radiological emergency plan which are held regularly to ensure effective communication and clear understanding of the individual roles and functions of each responding organization. Such exercises are found to be beneficial especially for the training of new staff.

Moreover, Through the agency's Incident and Emergency Centre (IEC), DAE regularly involves the exercises and training courses and share the information and data on emergency preparedness and response for nuclear and radiological incidents and emergencies.

IV. CONCLUSION

Myanmar acceded to the Convention on Nuclear Safety in 2016 and Assistance Convention in 2022. Recently, Myanmar does not have any nuclear installations in operation, she shows fulfilment of the obligations of the Convention. Despite being a Contracting Party without nuclear installations, the government has already supported the establishment of the necessary

legislative, regulatory, and organizational framework to ensure the safety, security and non-proliferation. Moreover, the new nuclear law is in the progress of drafting with the aim of possessing legislations strengthening nuclear safety, security and non-proliferation. The current atomic energy law will be replaced by that Nuclear Law. As new legislative and regulatory frameworks are under development, it still requires to take additional measures over years. Nonetheless, the DAE, which is both regulator and promoter of peaceful use of nuclear energy, practices and follows basic safety standards of IAEA, for the protection of the health of workers and the general public against the dangers arising from ionizing radiation. Myanmar has already adopted transparency on any nuclear activities by implementing obligations contained in several international and regional legal instruments.

ANNEX – List of Acronyms

CNS	Convention on Nuclear Safety
DAE	Department of Atomic Energy
DRI	Department of Research and Innovation
HRD	Human Resources Development
ICRP	International Commission for Radiation Protection
IAEA	International Atomic Energy Agency
MSTRD	Myanmar Science and Technology Research Department
SEANWFZ	Southeast Asian Nuclear-Weapon-Free Zone Treaty
ASEANTOM	ASEAN Network of Regulatory Bodies on Atomic Energy