

KINGDOM OF CAMBODIA

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Ministry of Mines and Energy

National Report

for

**The 8th and 9th Review Meeting of the Contracting Parties to
the Convention on Nuclear Safety**

August 2022

This report has been prepared by the Government of the Kingdom of Cambodia in accordance with the Article 5 of the Convention on Nuclear Safety for submitting to the 8th and 9th Review Meeting of Contracting Party.

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National Report
for the
8th and 9th Review Meeting of the Contracting Parties to the
Convention on Nuclear Safety

I. Introduction

Kingdom of Cambodia has been a member of the IAEA since 1958. With its territory of 181,035sq.km, which is a member of the Association of the South-East Asia Nation (ASEAN), borders with Vietnam to the East and South, Lao PDR to the North, Thailand to the West and North and to the Gulf of Thailand to the South. As of August 2022, the population of Cambodia is 17.20 Million (“Cambodia Population (2022) - Worldometer.”)

Currently, Cambodia has neither nuclear power plants (NPP) in operation nor planned for nuclear installation in future. However, in its ambitious of peaceful application of the nuclear and ionizing radiation, Cambodia established Office of Atomic Energy Technology (OAET) in 2005 that is now upgraded to be a Department of Nuclear Science and Technology (DONST) under the General Department for Energy of the Ministry of Mines and Energy (MME). Since the nuclear and radiation safety is very importance, while the government attempts to use of the technology peacefully to achieve the sustainable development goals and its Rectangular Strategy phase IV, Cambodia ratified and has become a party to the Convention on Nuclear Safety (CNS) since April 04, 2012. As a country without NPP, there are few requirements of the CNS are eligible to apply. Moreover, in its constitution, Cambodia is absolutely prohibited from manufacturing, use and storage of nuclear, chemical or biological weapons.

Meanwhile, the application of the ionizing radiation is very small and limited to human health, agriculture, veterinary, industry, and research laboratory. Since, there is no central or proper storage facilities, some radiative wastes are planned to repatriated abroad. In its new license conditions, the radioactive operators are obliged to return its disused source to the original countries.

The nuclear and ionizing radiation safety, security and safeguards is, currently, rests with the Ministry of Mines and Energy (MME). The Ministry is responsible for research and development and as well as play a role of regulatory functions to control the application of the nuclear and ionizing radiation technology to ensure the sources or nuclear materials are used safely, securely and proper safeguarding. in April 2021, MME adopted the ministry’s circular (PRAKAS) on the control of importing and uses of radioactive materials and radioactive sources. The circular aims at (1) effectively on control of radioactive materials and radioactive sources on safety security transparency and accountability basis; (2) protect human

health animal and environment away from radioactive materials and sources events; (3) promote the participation of the Kingdom of Cambodia on the use of radioactive materials and sources safely and securely. The comprehensive nuclear law of the Kingdom of Cambodia is drafted and in process for promulgating.

The first Country Programme Framework of Cambodia was adopted in 2011, for the period of 2012-2016. During three TC cycles the priority area of Radiation Safety Infrastructure was addressed through the projects KAM/9/001 Establishing a National Radiation Safety Infrastructure (2012, budget €184,172), KAM/9/002 Building Capacity in Radioactive Waste Management (2014, budget €44,846) and KAM/9/003 Supporting the Launching of a Nuclear Regulatory Authority (2016, earmarked budget €216,900). The IAEA supported Cambodia in setting up an operational national radiation basic safety infrastructure and in strengthening capabilities for safe management of the radioactive waste.

This is the second National Report of Cambodia (the Report). The Report aimed at demonstrating that Cambodia is fully committed to fulfilling the obligations resulting from the CNS. The Report is organized by the set format and the structure given in the guidelines INFCIRC/572 and it is prepared in accordance with Article 5 of the CNS for review at the 8th and 9th Review Meeting of the Contracting Parties to the Convention on Nuclear Safety which will be held at IAEA's Headquarter in Vienna.

II. Summary

As the IAEA member state, Cambodia fully committed to safety, security and safeguards resulting from the peaceful applications of the nuclear and ionizing radiation technologies. The Government has formed the MME's DONST to perform the regulatory function under the Law of the Establishment of MME. Currently, MME has issued the import permit and licenses for operation to the operators to the body who involve in the operation of the nuclear materials and ionizing radiation sources. So far, there are still small quantity of the materials and sources being deployed within the country. The inspection to the license holders and operators on the compliance of safety and security license conditions are regularly performed. The license holders, operators have to obtain the approval on their emergency preparedness and response plan. The appointment of the radiation safety officer within the license holders is the obligation. Under the Technical Cooperation assisted by IAEA, Cambodia has received several technical cooperation projects ranging from the promotion of application to radiation safety infrastructure. The comprehensive nuclear law of Cambodia is being drafted. The drafting law complies with the international norms and practices and the IAEA's safety, security and safeguards rules and recommendations. To ensure its commitment on peaceful applications,

Cambodia is also being party to several international treaties, conventions, agreements.

III. Obligations of CNS

Article 7: Legislative and Regulatory Framework

7.1. Legislative Framework

By its 1993 Constitution and subsequent amendments, Cambodia is absolutely prohibited from manufacturing, use and storage of nuclear, chemical, or biological weapons. The national laws are also relevant in connecting with regulating of the nuclear and ionizing radiation technology applications. The legislative instruments concerning the control of the nuclear materials and ionizing radiation technology application in Cambodia are as follow:

7.1.1. Laws and Regulations of Cambodia

Law on Environmental Protection and National Resources Management (1996) aims at development of a healthy and clean environment, conservation of natural resources and cultural heritage, and provision for the environment impact assessment on proposed the project development by the line ministries and companies. The Government Sub-decree no. 209 ANKr.BK on the enforcement of the list of prohibited restricted goods, and the goods to be limited aims at licensing and permission of the import of the prohibited goods and the good to be limited, including the Nuclear materials, Nuclear facilities, radiation sources and its relevant facilities, etc. This sub-decree no. 209 ANKr.BK is substituted by the Sub-decree no. 17 ANKr.BK on the enforcement of the list of prohibited restricted goods, dated 20 February 2020. The new sub-decree made the amendment of explanatory note II of the Annex 2 of the Sub-decree no. 19 ANKr.BK. The Customs Law (2007) aims at control of the importing/exporting goods. Law on Counter-Terrorism (2007) concerning the counter terrorism including the anti-malicious acts in using nuclear and radioactive sources. And there are many other relevant Law on Punishment of Terrorism (1992), Law on Disaster Management and Emergency Response (2007), Law on the Prohibition of Chemical, Nuclear, Biological, and Radioactive Weapons (2009). The Law on the Establishment and the Government Sub-decree on the establishment and operation of MME in 2013 and 2018 respectively. A drafting comprehensive nuclear law of the Kingdom of Cambodia is in progress. The draft Law aims at encouraging the peaceful uses of nuclear/ionizing radiation technologies, with strengthening safety, security, safeguards and civil liability. Cambodia received IAEA legislative assistance in the elaboration of this draft law since 2012.

7.1.2. International legal instruments

Moreover, Cambodia parties to several relevant international conventions, treaties, protocols and other legal instruments, such as:

- Treaty on Non-proliferation of Nuclear Weapons accessed in 1972 (W) and 1987 (M).
- Southeast Asia Nuclear Weapons-Free Zones (Bangkok Treaty) signed in 1995, and entered into force in 1997.
- Agreement between the Kingdom of Cambodia and the IAEA for the application of Safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons and the Southeast Asia Nuclear Weapon-Free Zone Treaty signed in 1999.
- Convention on Physical Protection of Nuclear Material acceded in 2006
- Convention on Early Notification of a Nuclear Accident acceded in 2012
- Convention on Nuclear Safety acceded in 2012
- Small Quantities Protocol and its amendment acceded in 2005 and 2014 subsequently
- Protocol of Additional to the Agreement between the Kingdom of Cambodia and the IAEA for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons and the Southeast Asia Nuclear Weapons Free Zone Treaty accede in 2015.
- Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology 2017 (RCA 2017) acceded in June 2017.
- Currently, the government is in processes of ratifying to be the party to IAEA's Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

7.1.3. Bi-lateral Agreements and MOU

On the bi-lateral basis, the Royal Government of Cambodia and the Russian Federation came into an Agreement on the Cooperation in the field of the use of Nuclear Energy for Peaceful Purposes. The Agreement has been signed in September 2017. The Memorandum of Understanding (MOU) between National Council for Sustainable Development (NCSD) of Cambodia and the China National Nuclear Corporation (CNNC) of China on the Cooperation on Nuclear industry for the Peaceful Purposed has been signed in September 2017.

7.2. Regulatory Framework

MME/DONST functions as the national regulatory authority on the use of the ionizing radiation sources and radioisotope.

7.2.1. National Safety Requirements and Regulations

The Sub-decree no. 209 ANKr.BK and its substitution Sub-decree no. 17 ANKr.BK on the Enforcement of the List of Prohibited and Restricted Goods, is determined the importing exporting of the Nuclear materials shall be jointly approved by MME and the Custom Office to ensure the Materials shall be strictly control in order to protect the health and life of the human, animal and nature. The Sub-decree on the Preparation and Operation of MME, the Ministry of Mines and Energy is empowered to ensure the quality and efficiency of the management and the achievement of the nuclear civil and ionizing radiation application in Cambodia. MME has to foster the safety protection on health, working conditions and environment for the people and the nature resulting from nuclear civil and ionizing radiation applications.

7.2.2. System Licensing

Cambodia is a small quantity in terms of application of Radiation sources. The applications, currently, are in medical, agricultural, veterinary, education, industry and environment. Those sources are imported. There are operators have obtained the operation license and importing permit from MME/DONST. As of 2022, there were 11 radioactive sources have been possessed by the operators and 1 other sources are reviewed by MME prior to import, however, 5 other sources are reviewing by MME prior authorized to use/operate. There are three LINAC accelerators facilities are operation for Cancer treatments (two in Government hospitals and one in private clinic). MME/DONST is conducting the awareness propaganda on safety and security on the application of nuclear material and radiation sources. The propaganda aims at registration of the sources and training on the operation the facilities properly in accordance with the international practice and norms. MME/DONST obtained the RAISE System from the IAEA under the Project KAM9004 Implementation. However, the RAISE system is not yet well understood how to operate it, so we have been recording the information of license in excel platform.

7.2.3. System of Regulatory Inspection and Assessment

The MME/DONST's inspectors conducts inspection activities to check and verify the license holders are in compliance with the conditions set out in the licenses and application regulations, codes and standards/norms. The non-compliance license holders will be notified with the correction recommendation to remedy the situation. The MME/DONST has to conduct inspections to satisfy itself that the operator is in compliance with the condition set out, for example, in the authorization or regulations. In addition, the inspectors also provide the recommendation about the safety and security principle for the use of radiation sources in their facilities as well.

Article 8: Regulatory Body

8.1. The Establishment of the Regulatory Body

The Royal Decree #1213/017 dated 6th December 2013 and the Royal Government Sub-decree #137 dated 31st October 2018, MME has been established and granted the responsibilities on the regulatory function in the areas of safety, security and safeguards, and also in promoting peaceful nuclear and ionizing radiation applications. MME's DONST is working to ensure the authorized and regulated sources of ionizing radiation and the use of nuclear energy in Cambodia are adequate protection for the workers and public health and as well as the environment. The Organization Chart of DONST is depicted in the Figure 8.1.

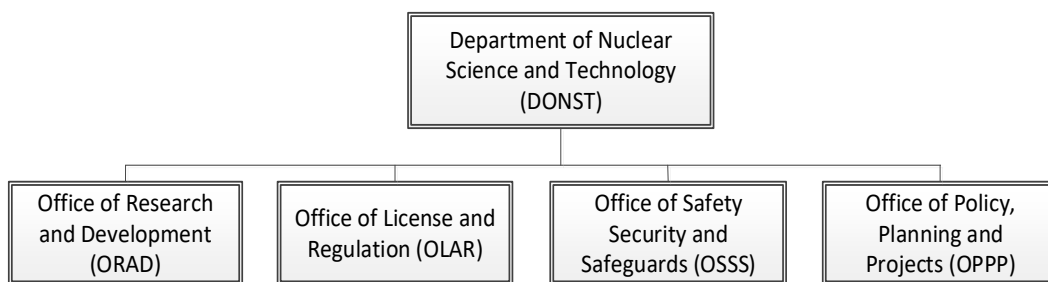


Figure 8. 1. The Organization Chart of DONST

8.2. Status of the Regulatory Body

DONST is established under the Royal Decreed and Government Sub-decree to assist the Ministry regulatory functions. The functions are exercised through the DONST Department of the MME, with following specific tasks:

- to prepare and determine the policy strategy laws regulations standards and guidance for nuclear civil including ionizing radiation applications
- to participate in study and establish the energy development plan which relating to nuclear energy sector
- to research and develop the science and technology which relating to nuclear civil including radiation applications
- to promote the (private) investment and participation in project implementation which relating to the use of the civil nuclear technology for the peaceful purpose
- to establish and determine the radiation standard for protection individual, public society and the environment protection from the potential adverse effect of ionizing radiation
- to implement the regulatory function to regulate, issue, amend, suspend, or revoke the license and impose the license fees and to

control and verify the relevant activities involving nuclear civil and ionizing radiation

- to inspect and take the corrective measure to be implemented, compliance to the treaties, conventions, agreements, regulations, standards and licensing conditions, by the activities and facilities involving nuclear civil including ionizing radiation for the purpose of safety, security and safeguards and other actions which is necessary for protection people and environment in the Kingdom of Cambodia from the nuclear civil and ionizing radiation incident
- to manage (maintain) the national radiation sources
- to cooperate with the national and international and other institutions involving the safety security and safeguards of the nuclear civil and ionizing radiation applications.

There are subordinate offices under DONST, namely Office of Research and Development, Office of License and Regulation, Office of Safety, Security and Safeguards, and Office of Policy, Planning and Projects. There are 20 officials and 2 contractual staff are working in DONST.

By the King's Royal Decree, the National Authority for the Prevention of the Chemical, Nuclear, Biological and Radiological Weapons (NACW) was established in 2007. Its responsibility is to enforce the Law on Prohibition of Chemical, Nuclear, Biological and Radiological Weapons (the CBRN Law), promulgated by the King in 2009. The objective of the CBRN Law is to absolutely prohibited the production, processing, acquisition, transfer, stockpiling, transportation and use of chemical, nuclear, biological and radiological weapons and chemical substances which are involved in production of such weapons in the Kingdom of Cambodia.

A National Counter Terrorism Committee (NCTC), which is chaired by the Samdech¹ Prime Minister, was established by the Government in 2004. The Law on Counter Terrorism, promulgated by the Royal Decree in 2007, criminalizes certain conducts as required by the UN Security Council Resolutions and other international legal instruments on counter-terrorism. With regards to nuclear and radiation activities, the Law covers the physical protection of nuclear materials and the suppression of the acts of nuclear terrorism.

Article 9: Responsibility of the License Holders

License Holders, who obtains the permission letter to use radioactive substances and radioactive sources, shall undertake the following conditions:

- Comply with national and international radiation safety and security standards in the use of radioactive substances and radioactive sources;

¹ Honorary title of the Prime Minister of Cambodia

- Have in place at least one skilled radiation protection safety and security officer or staff or employee;
- Submit report or radiation dose record for general radiation workers to the General Department of Energy of the Ministry of Mines and Energy in the period of every two months;
- Permit the technical officers from the General Department of Energy of the Ministry of Mines and Energy to conduct inspection, evaluation and verification on the enforcement of radiation safety and security for the use of radioactive substances and radioactive sources at the designated location of usage or storage as deemed necessary,
- Notify immediately to the technical officers from the General Department of Energy of the Ministry of Mines and Energy in the case of loss, theft or intentional sabotage of the physical of radioactive substances and radioactive sources from the designed location of usage,
- Notify in writing to the Ministry of Mines and Energy no later than 60 (sixty) days prior to the decommissioning of the operation or the business operation, which involve the use of radioactive substances and radioactive sources; and
- Return the radioactive substances and radioactive sources to the country of origins or other countries for conditioning after depleted or disused.

Article 10: Priority to Safety

Cambodia does not have nuclear installation. However, the license holders have to put the safety as the first priority which is specified under the conditions of the license.

Article 15: Radiation Protection

Cambodia's nuclear and radiation safety, security and safeguards is managed by the MME/DONST. Currently, the National Authority of Chemical Weapons (NACW), which supervises the Chemical, Biological, Radiological and Nuclear Authority (CBRN) is engaging with the nuclear and radiation source operation management as well. The counter-terrorism issues, in accordance with international conventions, are the responsibility of the National Counter Terrorism Committee (NCTC).

DONST, currently, issues licenses for radioactive sources, manages the collection and calibration of TLDs, sets up the environmental monitoring system, conducts the radiation detection survey regularly in mega-port, industry applications facilities, hospital cancer treatment centers, etc. The inventory of the radioactive material is updated regularly. In collaboration with the relevant authorities, DONST is working on managing the radioactive waste from the hospital facilities.

Article 16: Emergency Preparedness

The license holders have the primary responsibility for the safe and secure conduct of ionization radiation. The emergency preparedness and response plan have to be approved prior to gain the facility operation license. Moreover, Cambodia as it parties to, has to comply the provision of the Convention on Early Notification of a Nuclear Accident.

IV. Conclusion

As a member state of the IAEA, Cambodia commits for the application of the Nuclear/Ionizing radiation safely, securely and non-proliferations. Cambodia is partied to several international conventions, treaties, agreements in order to show its commitment on the peaceful application of the nuclear and ionization radiation in its territory and the region. Even-though it is facing some difficulties in perform it functions, but the Government has granted the regulatory functions to a body and clearly identify the job duties, man power, financing and so on. The Nuclear Law of the Kingdom of Cambodia, which is assisted by the IAEA, is in progress. DONST is maximize the implementation its functions follow the basic safety standards of the IAEA for protection of the health of workers and the general public against the harmful effect resulting of the peaceful application of the nuclear and ionizing radiation.

Annex-List of Acronyms

CNS	Convention on Nuclear Safety
DONST	Department of Nuclear Science and Technology
IAEA	International Atomic Energy Agency
NCTC	National Counter Terrorism Committee
NCSD	National Council for Sustainable Development
MME	Ministry of Mines and Energy
SEANWFZ	Southeast Asian Nuclear-Weapon-Free Zone Treaty
LINAC	Linear Accelerator
NACW	National Authority of Chemical Weapons
CBRN	Chemical Biological, Radiological and Nuclear Authority
KAM	Cambodia
TC	Technical Cooperation
OAET	Office of Atomic Energy Technology
NPP	Nuclear Power Plant
PDR	People Democratic Republic