

Democratic Socialist Republic of Sri Lanka

National Report

**Prepared and submitted in accordance with the Article 5. Reporting of the
Convention**

Seventh Review Meeting of Contracting Parties, April 2017

August 2016

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1. Introduction

1.1 History

Sri Lanka's involvement with Nuclear Science and Technology began in 1957 when it became a member of the International Atomic Energy Agency (IAEA). This was followed by the establishment of the Radioisotope Centre of the University of Colombo in 1962 and the establishment of the Atomic Energy Authority (AEA) in 1969 by the Atomic Energy Authority Act no. 19 of 1969.(AEA Act) The AEA Act delegated two main responsibilities to the AEA, namely, promotion of the utilization of nuclear technology for the benefit of the people of Sri Lanka, and protection of workers engaged in using radiation and radioisotopes and the public from harmful effects of ionizing radiation.

Until 2014, the AEA functioned as the national regulatory authority on use of radiation and radioisotopes, the national organization responsible for facilitating the use of nuclear technology in medical, industrial and agricultural sectors and as the focal point of the IAEA in Sri Lanka. As a result of the expansion of activities involving the utilization of nuclear technology in Sri Lanka following the construction of a new building for the AEA with laboratory facilities, the need for an independent regulatory authority was realized. The Sri Lanka Atomic Energy Act No. 40 of 2014(Atomic Energy Act) enacted in October 2014 created two new organizations, namely the Sri Lanka Atomic Energy Regulatory Council (the Council) and the Sri Lanka Atomic Energy Board (SLAEB). This Atomic Energy Act of Parliament delegates the responsibility of developing and implementing a regulatory regime to ensure the protection of personnel and the environment in the use of nuclear technology for beneficial uses and for ensuring security of radioactive sources to the Council and the responsibility of facilitating the use of nuclear technology to the SLAEB. With the formation of the Council and the SLAEB the AEA ceased to exist.

1.2 Present status

The Council, the regulatory body came into existence on the 1st of January 2015. The Council has the responsibility of establishing and implementing a regulatory regime in order to ensure the protection of personnel and the environment from potentially harmful effects of radiation and to ensure security of radioactive sources. The fulfilment of the mandate of the Atomic Energy with regard to regulatory programme requires the establishment of a licensing and an inspection system for all users of radiation and radioisotopes, control of import and export of radioactive materials, management of radioactive waste, ensuring physical protection of radioactive materials, developing the capability to respond to nuclear or a radiological emergency, meeting the obligations of Sri Lanka under the Safeguards agreement and other conventions signed under the auspicious of IAEA and the establishment of the legislative and regulatory framework necessary for the above.

1.3 National policy towards nuclear activities

Nuclear activities in Sri Lanka is conducted under the following policy principles

- (a) All nuclear activities in Sri Lanka shall be carried out exclusively for peaceful purposes and in compliance with the relevant international obligations of Sri Lanka relating to the same (section 61 of the Atomic Energy Act).
- (b) The Council should be an independent regulatory authority that carries out its mandate without fear or favour and with transparency.
- (c) The Council should use its powers judiciously without unnecessarily burdening its customers.
- (d) The Council should optimize the utilization of financial and other resources available.
- (e) The Council should maintain good collaboration with the IAEA.
- (f) The Council should cooperate with relevant organizations to promote radiation safety and security.

1.4 National nuclear programme

Sri Lanka has no operating nuclear power plants or any activity related to production of nuclear material. Sri Lanka Government has also not taken any policy decision for establishment of nuclear power plants.

The uses of nuclear technology in Sri Lanka are limited to uses in medicine, industry, agriculture, research and teaching. The uses in the above are regulated by the Council established on 1st January, 2015 under the provisions of Atomic Energy Act and regulations, rules and an order made thereunder.

1.5 Commitment to the convention on Nuclear Safety (NSC)

Sri Lanka has made a commitment to accession the Convention on Nuclear Safety on 11th August, 1999 and will be committed to implement the provisions of the Convention.

Due to lack of independent regulatory authority in Sri Lanka in the past and non-availability of a designated institute, it was not possible for Sri Lanka to submit national reports and attend the review meetings for the full period of the meetings. However, Sri Lanka has represented in few occasions during review meetings to brief the status of nuclear regulatory programme of Sri Lanka.

1.6 National Report to the 7th review meeting of NSC

Sri Lanka's national report to the 7th review meeting of the NSC is prepared under the guidelines given in the information circular INFCIRC/572/Rev.4 dated 16, April 2013 on "Guidelines regarding National Reports under the Convention on Nuclear Safety" and Submitted in accordance with Article 5 of the Convention.

2. Summary

Sri Lanka has promulgated its new Atomic Energy Act titled Sri Lanka Atomic Energy Act No.40 of 2014 in 2014 and Sri Lanka Atomic Energy Regulatory Council (the Council), the independent regulatory authority was established from 1st January, 2015 under the provision of this Act. The Council is mandated to:

- a) issue licences required to be issued under this Act and renew, modify, suspend or revoke the same;
- b) formulate an inspection programme to ensure compliance with the requirements imposed;
- c) take appropriate measures to ensure due compliance with the provisions of this Act, proper enforcement of regulations or rules made thereunder and conditions specified in licences issued;
- d) maintain a national register containing information on all sources available within Sri Lanka;
- e) provide information regarding the regulatory activities of the Council to the general public, the media and any other relevant stakeholders;
- f) make recommendations to the Minister in-Charge of the subject of Atomic Energy (the Minister) on the formulation of a national policy and strategy on protection against ionizing radiation, the safety and security of sources and nuclear and other radioactive material and on radioactive waste management;
- g) formulate and review rules, codes and standards relating to radiation protection and the application of ionizing radiation, which reflects best practices enunciated by the IAEA and any other similar International Organizations;
- h) advise the Minister on any matter referred to the Council and on matters which the Council considers appropriate to give its advice on; and
- i) perform and discharge such other duties and functions as in the opinion of the Council, are necessary in achieving the objectives of the Council.

The main focus of the Council after its establishment in the year of 2015 as a effectively independent regulatory authority was to accomplish its legal infrastructure necessary for establishment of licensing and inspection system to meet the requirements of the Atomic Energy Act and establishment of recruitment and promotional schemes.

Accordingly, as per provisions of the Atomic Energy Act, two rules and one order was published in the government gazette in collaboration with Department of Legal Draftsman and issuance of new licenses were commenced. New recruitment and promotional schemes were prepared and approval of the Department of Management Services was obtained.

Further in 2015, the Council provided several radiation protection services to the state and private sector organizations to achieve safety norms by performing regular inspections of premises that use radiation sources and radioisotopes. All the institutes that have applied for the licence for possessing and using radioisotopes or irradiation apparatus (including medical X-rays) were granted licence after proper assessment of safety and security of the sources and the facilities.

Authorizations for import/ export of radioactive materials were carried out in the year under review and approvals were also given for irradiation room plans with the recommendations to meet the Council's radiation protection requirements.

The Council paid its attention to fulfil the obligations of international conventions signed by Sri Lanka following the directions provided in Section 12 (e) of Atomic Energy Act.

As the manpower development is an essential component for enhancing the regulatory activities carried out by the Council, the Council officers were provided with overseas training opportunities and obtained services of the experts to conduct local training programmes to develop the work related capabilities of the staff. Most of the overseas training programmes were supported by the IAEA and United States Department of Energy under its Global Material Security (GMS) Programme.

The Council conducted several programmes to educate heads of irradiation facilities, Radiation Protection Officers, and users on new Act and its requirements, licensing and inspection systems of the Council. Activities carried out by the Council during the year of 2015 is focused on the following areas:

- Legislation and regulations
- International treaties and conventions
- Authorization(licensing and approvals)
- Import and export control
- Safety inspections
- Security of Nuclear and other Radioactive Materials
- Waste management and transportation of radioactive materials
- Emergency response and planning
- Human resources development

Numerous challenges had to be faced in implementing certain policy decisions and in complying with legal requirements of the new Atomic Energy Act. Being a new regulatory authority, one of the challenges of the Council in 2015 was to ensure the stakeholders that the Council performs its functions in a fair and efficient manner due to the fact that the Atomic Energy Authority (predecessor of Council) was responsible for both promotional and regulatory work. Another challenge faced by Council is to cope up with the legal requirements of Atomic Energy act with the developments of socio-

economic forces and global trends, due to the continuous upgrading of the regulatory systems and practices in the international level. It was also found challenging to maintain the functions in a smooth and effective manner with a limited number of human resource. The existing cadre as at 1st of August, 2016 was twenty one although approved cadre is 39.

Sri Lanka is striving to achieve legal infrastructure and other resources necessary for ensuring safety of the people and the environment and security of the sources and fulfilling obligations of Sri Lanka for the nuclear instruments signed under the auspicious of the IAEA.

Article 6: Existing Nuclear Installations

Each Contracting Party shall take the appropriate steps to ensure that the safety of nuclear installations existing at the time the Convention enters into force for that Contracting Party is reviewed as soon as possible. When necessary in the context of this Convention, the Contracting Party shall ensure that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation. If such upgrading cannot be achieved, plans should be implemented to shut down the nuclear installation as soon as practically possible. The timing of the shutdown may take into account the whole energy context and possible alternatives as well as the social, environmental and economic impact.

Sri Lanka doesn't have nuclear power plants or any storage, handling and treatment facilities for radioactive materials directly related to operation of the nuclear power plant

Article 7: Legislative and Regulatory Framework

- 1. Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.**
- 2. The legislative and regulatory framework shall provide for:**
 - i. the establishment of applicable national safety requirements and regulations;**
 - ii. a system of licensing with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a licence:**
 - iii. a system of regulatory inspection and assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licences;**
 - iv. the enforcement of applicable regulations and of the terms of licences, including suspension, modification or revocation.**

Article 7.1 Establishing and maintaining a legislative and regulatory framework to govern the safety of nuclear installations.

7.1.1 Overview of primary legislation and international instruments

Legislative and regulatory framework governing the uses of ionizing radiation in Sri Lanka is provided by the Sri Lanka Atomic Energy Act No. 40 of 2014". The Act provides provisions for making regulations, rules and orders for further strengthening the regulatory framework for governing the safety and security of radiation sources and facilities.

The provisions for making regulations and rules are given in sections 86 and 87 of the Atomic Energy Act respectively.

7.1.2 The regulations to be made by the Minister under section 86 of the Act is as follows

- (a) the regulation of the exportation, importation, reexportation, storage, mining, processing, designing, manufacturing, construction, assembling, acquiring, distribution, selling, leasing, hiring, receiving, siting, locating, commissioning, possessing, decommissioning, disassembling, using or disposing radioactive material or radioactive sources and of designing, manufacturing, selling, locating, possessing, using, exporting or importing of irradiating apparatus;
- (b) the decommissioning of irradiation installations;
- (c) the protection of radiation workers against harmful effects of ionizing radiation, including medical surveillance and occupational exposure of ionizing radiation;
- (d) the protection of general public and the environment against harmful effects of ionizing radiation;
- (e) the regulation of medical practices involving ionizing radiation, including protection of patients;
- (f) the regulation of radioactive waste management, including release of waste into the environment and any practice which may affect public health and safety;
- (g) the security of radioactive sources and controlled items; and
- (h) the formulation of a compensation scheme for the payment of compensation to radiation workers for any injury, illness or damage caused due to exposure to ionizing radiation.

7.1.3 Rules to be made by the Council under the section 87 of the Act are as follows.

- (a) requirements to be complied with for the transport of radioactive material and radioactive waste to, from and within the Republic of Sri Lanka, which shall:-
 - (i) include a categorization of radioactive material that takes into account the potential hazard posed by types, quantities and activity levels of such radioactive material;
 - (ii) conform to the International IAEA regulations on safe transport of radioactive material;
 - (iii) include measures for the physical protection of radioactive material consistent with the standards laid down by the IAEA;

- (b) the specification of exclusions recommended by the IAEA;
- (c) preparedness and response to nuclear or radiological emergency situations;
- (d) criteria for qualifications of radiation workers;
- (e) the establishment of concentration levels of radioactivity in food and any other material used by the general public;
- (f) the establishment of concentration levels of radioactivity above which food and other items used by the general public shall be prohibited to be imported to or produced or marketed in Sri Lanka;
- (g) the development of policies, standards and codes of conduct in regard to radiation protection, safety and security of sources, including peaceful use of nuclear technology; and
- (h) requirements deemed necessary to give effect to the Safeguards Agreement, in respect of which no specific provisions are made by or under this Act.

7.1.4 Sri Lanka Atomic Energy Act no.40 of 2014

The Act provides provisions for

- (i). Notification, Licensing and Inspection of Sources and practices
- (ii). Safety and Security of Sources
- (iii). Export and Import Control of Nuclear and Other Radioactive Material
- (iv). Radioactive Waste Safety
- (v). National plans for Nuclear or Radiological Emergencies
- (vi). Transboundary Emergencies
- (vii). Safeguards
- (viii). Physical Protection of Nuclear and other Radioactive Material
- (ix). Mining and processing
- (x). Funding for the regulatory authority
- (xi). Staff of the authority to carry out regulatory functions
- (xii). Offences and penalties

7.1.5 National Environmental Act No.47 of 1980

The National Environmental Act No.47 of 1980 provides for the protection and management of environment and matters connected therewith. The Central Environmental Authority (CEA), established under this Act is the regulatory authority responsible for implementation of the provisions of this Act related to protection of the environment. As per requirements of this Act and order no. 772/22 published in the government gazette notification dated 24.06.1993 by the CEA specifying projects as “prescribed projects” require prior environmental clearance from the Central Environmental Authority in the form of Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) depending on

the nature of the projects. The construction of a nuclear power plant has been specified in the above order as a prescribed project requiring an Environmental Impact Assessment for approval of the project.

The National Environmental Act stipulates that approval for all prescribed projects must be granted by a Project Approving Agency (PAA). At present, 23 Government Agencies have been designated as PAAs. A single Project Approving Agency is established as responsible for administering the EIA process for a project. When there is more than one PAA involved the appropriate PAA is decided by the CEA. It is important to note that a state agency which is a project proponent cannot function as a PAA for that project. Project Approving Agencies are listed in the Gazette Extra Ordinary No. 859/14 of 23rd February 1995 and Gazette Extra Ordinary, No. 1373/6 of 29th December 2004.

The National Environmental Act has identified two levels in the EIA process. If the environmental impacts of the project are not very significant then the project proponent may be asked to do an Initial Environmental Examination (IEE), which is a relatively short and simple study. However, if the potential impacts appear to be more significant, like for a construction of a nuclear power plant, the project proponent may be asked to do an Environmental Impact Assessment (EIA) which is a more detailed and comprehensive study of environmental impacts.

EIA reports must be kept open for public comments for 30 working days. IEE reports have been exempted from this requirement. However, an Initial Environmental Examination report shall be deemed to be a public document for the purposes of sections 74 and 76 of the Evidence Ordinance (Chapter 21) and shall be open for inspection by the public.

7.1.6 Sri Lanka Disaster Management Act, No.13 of 2005

Sri Lanka Disaster Management Act, No.13 of 2005 provides for effective management of natural or man-made disasters. Provision is given in this Act to make arrangements for mitigation of nuclear or radiological emergencies in collaboration with other stakeholders identified in the Act. The Disaster Management Centre established under this Act has the responsibility for laying down policies, plans and guidelines for disaster management for ensuring timely and effective response to any disaster including radiological or nuclear disasters.

7.1.7 International conventions and treaties to which Sri Lanka is a Party.

- (i). Convention on Nuclear Safety
- (ii). Convention on Early Notification of a Nuclear Accident
- (iii). Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
- (iv). Treaty on Non Proliferation of Nuclear Weapons

7.2 Legislative and Regulatory Framework

7.2.1 National Safety Requirement and Regulations

7.2.1.1 Issuance of a licence for a practice or a source within a practice involving ionizing radiation is guided by the following general requirements as given in section 13 of the Atomic Energy Act.

- (a) the safety and protection of human life, property and the environment from harmful effects of ionizing radiation;
- (b) that there is sufficient justification for permitting the conduct of a practice for which a licence is applied for;
- (c) that the normal exposure of individuals are restricted, so that neither the effective dose nor the equivalent dose caused by a possible combination of exposures from licenced practices, exceeds the dose limits as determined by the Council; and
- (d) that protection is optimized, so that the magnitude of individual doses, the number of individual exposures and the likelihood of incurring exposure are all kept as low as reasonably achievable, taking into account economic and social factors.

7.2.1.2 Regulations on Ionizing Radiation Protection of the Atomic Energy Safety Regulations No.1 of 1999

These regulations were made in 1999 under the provisions of AEA Act (Atomic Energy Authority Act No.19 of 1969) and contain general radiation protection requirements in line with IAEA Basic Safety Standards. The new Atomic Energy Act has given provisions under section 90(2)(j) that all regulations made under the repealed Act in force on the date preceding the appointed date and which are not inconsistent with the provisions of the new Act, shall be deemed with effect from the appointed date to be regulations made under the new Act. Since these regulations are not inconsistent with the new Atomic Energy Act, they are used for protection of public, workers and patients until new regulations to be made under the new Act are promulgated.

7.2.1.3 Atomic Energy (Licence) Rules No. 1 of 2015

This Rule was made by the Council, under Section 87 read with Section 23(1) (c) and Section 30 (1) of the Atomic Energy Act. This categorizes the maximum period of validity of each licence issued by the Council, based on the risk of the practice involving ionizing radiation. The licence period is from one year to three years depending on the risk of the practice. Further, the Rule grants power to the Council to levy a surcharge of Rs.100/- for each day,

where a licence holder fails to apply for the renewal of the licence, three months prior to the date of expiry of the existing licence.

7.2.1.4 Atomic Energy (Notification of Intention to Conduct a Practice) Rules No.1 of 2015

This Rule was made by the Council, under Section 87 read with Section 20(1) of the Act, provides the 'Form of notification' which should be submitted by any person who intends to conduct a practice involving ionizing radiation. Upon receipt of the notification, the Council determines whether the practice require a licence or not.

7.2.1.5 Order under section 19 of the Act

This order specifies the exempted sources and practices from regulatory control Licences under Atomic Energy Act requires only for the practices that are not exempted from the above order.

7.2.2 System of Licensing

7.2.2.1 Provisions for prevention of a conduct of a practice

The provisions given under section 18 of the Atomic Energy Act prevent operation of a practice without a valid licence which states that no person shall conduct a practice involving ionizing radiation :-

- (a). except under the authority of a licence issued by the Council for the purpose; or
- (b) unless it is a practice which has been exempted from the regulatory control of the Council, in terms of the provisions of this Act.

The Atomic Energy Act also provides provision for punishment as given below under section 18(2) to complement the above

- (c) A person who conducts a practice or uses any source for the conduct of a practice without obtaining a licence for that purpose shall commit an offence and be liable on conviction after summary trial before a Magistrate, to a fine not exceeding three million rupees or to an imprisonment for a term not exceeding seven years or to both such fine and imprisonment.

7.2.2.2 Licensing of new practices

(i) Notification

As per requirements of the Atomic Energy Act ,a person who intends to conduct a new practice shall forward a notification to the Council using the form

of notification published in Atomic Energy (Notification of Intention to Conduct a Practice) Rules No.1 of 2015

This form also can be downloaded from the Council's web-site, www.aerc.gov.lk or can be obtained from the Council

(ii) Evaluation of the notification

Upon receipt of the notification, the Council will evaluate the information provided, and determine whether the practice can be exempted from the regulatory control or whether a licence from the Council is required for the practice concerned. The determination of the Council is conveyed to the applicant. If the practice can be exempted no further action will be required from the applicant. If the practice requires a licence, and considering the nature of the information provided of the practice in the notification, the Council will inform the applicant with relevant application forms,

Whether approval of the Council is required for the plan of the building (existing or to be constructed) in which the practice is to be conducted.

and

Whether the import and export authorization is required for the sources involved in the practice before the licence for the practice is issued.

(iii) Approvals for buildings and for importation

- a) For practices that require prior approval of building plan, the applicant should submit in the prescribed forms, a plan of the building in which the practice is to be conducted along with the radiation safety and security measures to be implemented at the facility.
- b) If import of any radioactive material, irradiating apparatus or equipment containing radioactive sources is required for the intended practice, approval for importation should be obtained by providing information requested in the relevant forms.

(iv) Application for a licence

The applicant should submit an duly filled application for a licence, using the application form relevant to the practice, along with a processing fee of Rs. 2000/=.

The applications submitted will be reviewed and if the Council is satisfied that the intended practice can be conducted according to the safety requirements of the

Council. Upon the payment of the licencing fee, a licence is issued to the applicant with conditions, if necessary to conduct the relevant practice for the period specified in Atomic Energy (Licence) Rules No. 1 of 2015. The duration of a licence is determined in this rule depending on the risk of the practice. All new facilities require prior inspection before a licence is issued.

(v) Renewal of a licence

- a) The validity period of a licence should be extended by submitting an application for renewal of the licence using the relevant application form, along with the processing fee of Rs.2000/=, not less than 03 months prior to the date of the expiry of the current licence.
- b) The applications submitted are reviewed by the Council and if the Council is satisfied that the intended practice can be conducted according to the safety and security requirements of the Council, the licence is renewed with conditions if required.
- c) If an extension of the validity period of the licence is not required as a result of the practice being discontinued, it should be conveyed to the Council by the licensee not less than 03 months prior to date of expiry of the licence.

(vi) Modification of a licence:

The licence conditions' prohibits continuing the conduct of a practice for which the licence was issued without applying to the Council in writing for a modification of such licence, in any one or more of the following circumstances.

- a) Where any radiation source not authorized by the licence is to be used.
- b) Where a higher activity of radioactive material than which was authorized by the license is to be used.
- c) Where a modification is to be carried out to the physical infrastructure used for the conduct of the practice concerned.
- d) Where new employees are to be employed in the conduct of the practice for which the licence was issued.

The Council shall having considered the circumstances for which modification of the licence is requested, will decide on the modifications that could be permitted and modify the licence issued accordingly.

7.2.3. System of Regulatory Inspection and Assessment

The council under section 15 of the Act shall for the purposes of assisting the Council in the performance of its functions under this Act, appoint from among its officers such number of persons as inspectors (hereinafter referred to as "Authorized Inspectors") and shall furnish them with appropriate credentials.

Under section 16 of the Act the Council may request the Inspector General of Police to provide the services of any police officer above the rank of an Assistant Superintendent of Police, for the purpose of assisting an Authorized Inspector in the performance of his functions. According to the Act, it shall be the duty of the Inspector-General of Police to ensure the availability of such police officer, where a request is made by the Council.

A police officer whose services are provided by the Inspector-General of Police on a request made under the Act shall notwithstanding anything to the contrary in any law upon a complaint made by the Council, arrest without a warrant any person who is suspected to have committed an offence under this Act.

Authorized inspectors authorized by the Council for safety and security inspections have the following powers

An Authorized Inspector may at any reasonable hour of the day, either announced or unannounced, enter upon any premises, building, vessel, vehicle or aircraft:-

- (a) where he or she has reasonable grounds to believe that a practice is being conducted or any radioactive or nuclear material is being stored or transported or carried, without obtaining a licence as required by this Act; or
- (b) for the purpose of carrying out an inspection, investigation or examination or for obtaining any samples, and the persons present in such premises, building, vessel, vehicle or aircraft, shall render all necessary assistance to the Authorized Inspector in discharging his duties.

Under section 43(3) of the Atomic Energy Act a licensee and every employee or agent of such licensee shall provide all assistance that may be requested for by an Authorized Inspector, to enter and inspect, examine and to take samples or carry out any activity in the course of the performance of his functions under this Act.

Under section 40(4) of the Atomic Energy Act, any person who willfully obstruct an Authorized Inspector or refuses to comply with any request made by such Inspector in the performance of a duty lawfully entrusted to such person, shall commit an offence and be liable on conviction after summary trial before a Magistrate to a fine not exceeding three hundred

thousand rupees or to a term of imprisonment for a period not exceeding two years or to both such fine and imprisonment.

The Council under section 40(5) of the Act shall maintain a record of all inspections carried out by an Authorized Inspector.

Under section 41 of the Act⁴¹ where an Authorized Inspector has reasonable grounds to believe that a practice for which a licence has been issued, is being carried out in a manner which poses an immediate risk of injury to persons or substantial damage to property or the environment, such Inspector may cause the premises where such practice is being conducted to be sealed. In the event of the sealing of any premises, the Authorized Inspector shall forthwith inform the Council of such fact. The Council shall within seven days of a sealing as above make an application to the Magistrate's Court, and obtain an order confirming the sealing that was carried out.

Under section 41(4) of the Act if an Authorized Inspector has reasonable grounds to believe that any source is insecure and the security of such source may be affected by external influence, he may direct the licensee to remove such sources to a more secure location, as shall be proposed by the Council.

Under section 40 (1) of the Act an Authorized Inspector who is generally or specially authorized in that behalf, may require a licensee or any employee of the licensee, to-

- (a) make available information or any records on the types and quantities of sources or radioactive material utilized in the conduct of the practice;
- (b) give details of the manner in which and the locations at which, radioactive or nuclear materials are stored; or
- (c) Provide any other information as he or she may consider necessary, for the due performance of his or her duties under this Act.

Inspections are carried out using the graded approach and period of the inspection is as same as the period of a licence. Depending on the risk of the practice, licence and inspection period is either 1,2 or 3 years. After each inspection, an inspection report shall be prepared by the inspector of the finding of the inspections with regard to safety and security of sources and giving recommendations for improvement of safety and security of the sources and practice.

All new facilities require an inspection before a licence is issued and a licence is issued only if the Council satisfy that all safety and security measures are in accordance with the requirements of the Act and subsidiary legislation of the Act.

7.2.4: Enforcement of applicable regulations and terms of licences

The Council has been authorized to take legal actions through an appropriate court of law for offences committed under this Act. The punishments are clearly given under each section as appropriate and these punishments are based on the severity of the offences.

7.2.4.1 The enforcement measures

The enforcement measures available for the Council in case of non-compliances with regard to licences are as follows.

(i) Section 18(2) of the Act

A person who conducts a practice or uses any source for the conduct of a practice without obtaining a licence for that purpose shall commit an offence and be liable on conviction after summary trial before a Magistrate, to a fine not exceeding three million rupees or to an imprisonment for a term not exceeding seven years or to both such fine and imprisonment.

(ii) section 30 of the Act

Where a licensee fails to apply for the renewal of its licence three months prior to the date of its expiry, the licensee shall be subject to the payment of a surcharge for each day at such rate as shall be determined by the Council by rules made in that behalf, until the date of the expiry of the licence, in addition to the renewal fee required to be paid when renewing the licence. The Atomic Energy (Licence) Rules No. 1 of 2015 imposed Rs.. 100/- per day as the surcharge.

Under section 30 (2) of the Act) where a licensee fails to apply for a renewal of the licence prior to the date of its expiry, the Council shall have the power immediately upon the expiry of such licence-

- (a)** to cause the premises in which the practice is being conducted to be sealed and within seven days of such sealing, to make an application to the Magistrate's Court to obtain an order confirming the sealing of the premises; and
- (b)** to issue such directions as it may consider appropriate pertaining to the manner in which the safety and security of the radioactive source shall be ensured and for the protection of human life and the environment, which the licensee shall be required to strictly adhere to.

7.2.4.2 Cancellation of a licence

(i). As per section 31 of the Act a licence issued by the Council may at any time by a notification sent to the licensee in that behalf, be cancelled where-

(a) the licensee has acted in violation of any condition of the licence or in contravention of any provision of this Act or any regulation or rule made thereunder, which pose an unacceptable threat or risk to public health or a danger to the environment;

(b) the licensee has failed without reason, to comply with any directives issued by the Council under section 39 which says

“The Council may issue directives to any licensee regarding measures that should be taken to prevent or abate any damage or detriment being caused to human life and the environment or to prevent loss of control of safety and security of sources. The licensee shall comply with any directives so issued “.

(c) the licensee has ceased to conduct or operate the practice for which the licence was issued;

(d) due to any prevailing circumstances the Council determines that the continued conduct of the practice for which the licence was issued, would pose an unacceptable threat or risk to public health or a danger to the environment; or

(e) the receiving environment has altered or changed due to certain natural and other causes which renders the continued conduct of the practice a risk to public health or a danger to the environment.

Under section 32 of the Act any person who continues to conduct a practice after the cancellation of the licence shall commit an offence and be liable on conviction after summary trial before a Magistrate, to a fine not exceeding three million rupees or to an imprisonment for a term not exceeding seven years or to both such fine and imprisonment.

(ii) Effect under section 33 of the Atomic Energy

(a) Where a licence is cancelled by the Council, it may cause seals to be affixed at such required places or to any source, to prevent the continuance of the conduct of the practice.

(b) The Council shall within seven days of a sealing carried out under as above shall make an application to the Magistrate's Court, and obtain an order confirming the sealing that was carried out.

7.2.4.3 Suspection of a licence

(i) provisions under section 34 of the Atomic Energy Act

A licence issued by the Council may be suspended-

- (a) where the licensee has acted in violation of any condition of the licence or in contravention of any provision of this Act or any regulation or rule made thereunder and such violation or contravention does not however pose an unacceptable threat or risk to public health or a danger to the environment;
- (b) where any danger or risk caused or likely to be caused to public health or the environment can be mitigated or remedied through the adoption of corrective measures; or suspension of a licence.
- (c) where the licensee has failed without reason, to comply with any directives issued by the Council under section 39 of the Act.

Where a decision is taken to suspend a licence, the Council shall in a notification sent to the licensee, specify the period for which the licence is being suspended and the corrective measures that are required to be taken for the suspension to be removed.

Under section 34 (3) (a) of the Act the licensee shall carry out the corrective measures or steps specified in the notification prior to the expiry of the period of suspension.

Where the licensee is unable to complete the measures or steps specified before the expiry of the period of suspension, the licensee may request in writing for further time to carry out the same, and the Council may grant further time where it considers it appropriate in the circumstances.

Where the Council is satisfied that the measures or steps required have been carried out by the licensee satisfactorily, the Council shall remove the suspension imposed.

If a person who continues to conduct a practice after the receipt of a notification issued by the Council under and prior to the removal of suspension under as above shall commit an offence and be liable on conviction after summary trial before a Magistrate, to a fine not exceeding three million rupees or to an imprisonment for a term not exceeding seven years or to both such fine and imprisonment.

Article 8: Regulatory body

1. Each Contracting Party shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework referred to in Article 7, and provided with adequate authority, competence and financial and human resources to fulfill its assigned responsibilities.

2. Each Contracting Party shall take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organization concerned with the promotion or utilization of nuclear energy

8.1 Establishment of the Regulatory Body

8.1.1 Legal foundation

Under section 9 of the Act, established a regulatory authority to be called and known as the Sri Lanka Atomic Energy regulatory Council (the Council) for regulation and control of practices involving ionizing radiation. A practice involving ionizing radiation (practice) is defined in the Atomic Energy Act as follows.

“practice involving ionizing radiation” means any human activity that introduces additional sources of exposure or exposure pathways or extends exposure to additional people or modifies the network of exposure pathways from existing sources, in a way that increases the exposure or the likelihood of exposure of people or the number of people exposed;

8.1.2 The Vision, Mission and Goals

The Vision, Mission and Goals identified in the corporate plan of the Council are as follows.

(I) The Vision

A country protected from the potentially harmful effects of ionizing radiation.

(ii) The Mission

Protection of the general public, radiation workers, patients and the environment from potentially harmful effects of ionizing radiation by implementing an efficient and effective regulatory regime

(iii) Goals

The goals of the Council are,

- (a) To develop a regulatory infrastructure that meets the requirements of internationally accepted standards.
- (b) To be cost effective in performing its functions.
- (c) To develop a safety culture among its staff and licencees.
- (d) To be nationally and internationally visible.

8.1.3 Authorities and Responsibilities

Objectives, Powers and functions of the Council are as follows.

(i) Objectives

- (a) Establish requirements for the protection of persons and the environment against risks associated with exposure to ionizing radiation and for the safety and security of sources and facilities, as appropriate;
- (b) Take all appropriate steps to ensure the protection of persons and the environment from harmful effects due to any source, nuclear material and other radioactive material and ensure the security of such material and facilities; and
- (c) Ensure compliance with International Standards and obligations in the field of nuclear energy, which are required to be complied with by Sri Lanka.

(ii) Functions

- (a) issue licences required to be issued under this Act and renew, modify, suspend or revoke the same;
- (b) formulate an inspection programme to ensure compliance with the requirements imposed under this Act and conditions specified in licences issued under this Act;
- (c) take appropriate measures to ensure due compliance with the provisions of this Act, proper enforcement of regulations or rules made thereunder and conditions specified in licences issued;
- (d) maintain a national register containing information on all sources available within Sri Lanka;
- (e) provide information regarding the regulatory activities of the Council to the general public, the media and any other relevant stakeholders;
- (f) make recommendations to the Minister on the formulation of a national policy and strategy on protection against ionizing radiation, the safety and security of sources and nuclear and other radioactive material and on radioactive waste management;
- (g) formulate and review rules, codes and standards relating to radiation protection and the application of ionizing radiation, which reflects best practices enunciated by the international Atomic Energy Agency and any other similar International Organizations;
- (h) advice the Minister on any matter referred to the Council and on matters which the Council considers appropriate to give its advice on; and
- (i) perform and discharge such other duties and functions as in the opinion of the Council, are necessary in achieving the objectives of the Council.

(iii) Powers

- (a) take measures for the prevention of radiological emergencies;

- (b) establish mechanisms and procedures for informing and consulting the public and other stakeholders about the regulatory process and the safety, health and environmental aspects of regulated practices, including incidents, accidents and abnormal occurrences;
- (c) co-operate with local and international organizations to promote safety and security against risk of injury or damage, arising from ionizing radiation;
- (d) provide training for the staff of the Council and any other relevant person or body of persons, for the purpose of achieving its objectives;
- (e) take necessary steps to fulfill the obligations of Sri Lanka under international treaties, conventions, relevant protocols and agreements to which Sri Lanka is a party, relating to safety and security of sources;
- (f) make where available to any person both national and international and to the public, as determined by the Council, information relating to the utilization of sources and incidents and abnormal occurrences, which may cause an impact on human life or the environment;
- (g) liaise with government agencies and non-governmental organizations or individuals having competence in areas such as health, safety, environmental protection, security, emergency, transport or import and export of nuclear and radioactive materials, including radioactive waste;
- (h) inspect, review and assess practices and facilities for the purpose of verifying compliance with the provisions of this Act and any regulations or rules made thereunder and the conditions of any licences;
- (i) issue directives relating to corrective measures required to be taken if unsafe or potentially unsafe conditions are detected at any location where a licenced practice is being conducted;
- (j) take all steps as are necessary to give effect to obligations under the Safeguards Agreement, including the establishment and maintenance of a state system of accounting for and control of nuclear material;
- (k) implement regulatory measures for the security of nuclear or radioactive materials, related equipment and associated facilities, including measures for physical protection, to detect, prevent and respond to unauthorized acts involving such materials, equipment or facilities;
- (l) establish procedures and mechanisms to grant approval to institutes or individuals involved in issuing certification on radiation measurement and calibration of radiation measuring equipment;
- (m) conduct public awareness programmes in relation to nuclear science and technology and to take any precautionary steps required to be taken upon the occurrence of any accident involving radioactive or nuclear materials;
- (n) inspect any articles or commodities imported into Sri Lanka and which are available locally, and to take samples for the purpose of testing of radioactivity and where the Council deems it necessary and appropriate, to publish results of such test for the information of the general public, and all relevant authorities:

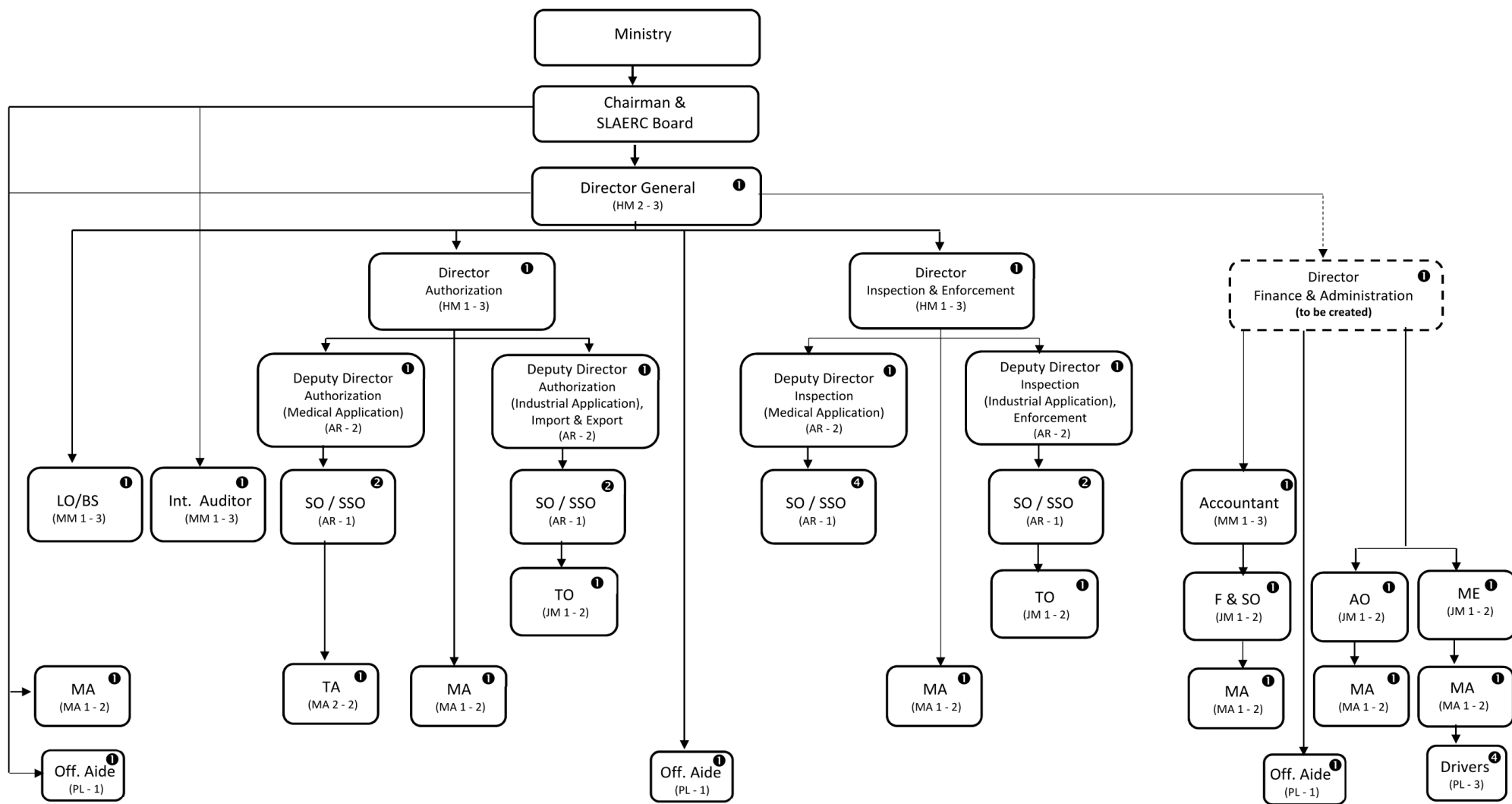
For the purpose of this paragraph “articles” and “commodities” include the container in which the articles or commodities are imported and any vessels or aircrafts carrying such containers;

- (o) acquire and hold any property, both movable or immovable and to sell, lease, mortgage, exchange or otherwise dispose of the same;
- (p) collect and publish reports and papers on any subject connected with the functions of the Council;
- (q) open and maintain bank accounts whether current, savings or deposit, in any bank approved by the Council; and
- (r) erect, equip and maintain buildings including laboratories, libraries, workshops and offices as are necessary for the performance of its functions.

8.1.4 Organizational structure

Organizational structure of the Council is given below.

Organization Structure of Sri Lanka Atomic Energy Regulatory Council (SLAERC)



SO / SSO	-	Scientific Officer / Senior Scientific Officer
Int. Auditor	-	Internal Auditor
LO / BS	-	Legal Officer / Board Secretary
TO	-	Technical Officer
F & SO	-	Finance & Supply Officer
AO	-	Administrative Officer
ME	-	Management Executive
MA	-	Management Assistant
TA	-	Technical Assistant
Off. Aide	-	Office Aide

8.1.5 Human resource development, and finance

Since the Council is a newly established regulatory authority (only one and a half year old), its manpower has to be developed from the beginning. Ten Scientific Officers and nine supportive staff were opted from the AEA at the time of separation of the regulatory authority as per provision of new Act.

The Government approved 41 cadre positions to the Council and the Council is in the process of filling the vacancies. The new cadre consisted of 16 scientific officers and 25 supportive staff. All the vacancies will be filled before end of 2017.

The new Scientific Officers are given on the job training under the supervision of trained officers for three years and during the same period they are provided with training offered by the IAEA, US Department of Energy, Japan Scientist Exchange programme and training offered by the Korean government.

The Scientific Officers are required to do an MSc in the relevant field for the next promotion and Council assist them in financing the MSc.

The total expenses for the regulatory authority are given by the Government allocating funds from the Government annual budget.

8.1.6 Openness and transparency

Under the power vested by the Act under section 12(b), the Council shall establish a mechanism and procedures for informing and consulting the public and other stakeholders about the regulatory process and the safety, health and environmental

aspects of regulated practices, including incidents, accidents and abnormal occurrences. A suitable mechanism and a procedure is yet to be developed for improving transparency and communication with the public.

8.1.7 Advisory committees

Under section 17 of the Act, the Council is empowered to;

- (a) appoint such number of Advisory Committees as it may consider necessary or appropriate; and
- (b) obtain the services of any expert outside its permanent staff, as advisors or consultants, to assist the Council in the performance and discharge of its duties and functions under this Act:

8.2 Status of the Regulatory Body

8.2.1 Place of the regulatory body and reporting

The regulatory body is managed by a Board of Management appointed by the Minister and consists of the five members as given below.

- (a) three persons who are experts in the field of nuclear science and technology or radiation protection;
- (b) one person who has experience in legal aspects connected with or relating to the objectives of the Council; and
- (c) a senior officer not below the rank of an Additional Secretary or a Director of the Ministry of the Minister assigned the subject of Environment, nominated by such Minister.

The Minister shall appoint one of the members of the Council as the Chairman of the Council.

The Council reports to the Minister in its day to day work and responsible to the Parliament for finance and performance of the work assigned to the regulatory authority through Committee of Public Enterprises (COPE). The Government Auditor General each year audits the financial and physical performance of the Council and report the COPE.

8.2.2 Independence of the regulatory body

The regulatory body is an independent autonomous body managed by a Board of Directors and independence of the Board of Directors is ensured by the requirements given under Schedule of the Act which indicate:

A person shall be disqualified from being appointed a member or continuing as a member of the Council, if such person :-

- (a) becomes a member of Parliament, a member of a Provincial Council or a member of any local authority;
- (b) ceases to be a citizen of Sri Lanka;
- (c) has been declared an insolvent or an undischarged bankrupt under any law;
- (d) is found or declared to be of unsound mind under any law in force in Sri Lanka or any other country;
- (e) has been convicted by a court of law in Sri Lanka or any other country;
- (f)
 - (i) is already a member of the SLAEB , at the time of being appointed as a member of the Council; or
 - (ii) is already a member of the Council, at the time of being appointed as a member of the Board; or
- (g) in the case of appointment as a member of the Council, if there is or likely to be a conflict of interest of the functions, duties of the Council.

Sri Lanka Atomic Energy Board (SLAERB) is the main body of the Government which promotes utilization of atomic energy in the country.

Article-9: Responsibility of the licence holder

Each Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant licence and shall take the appropriate steps to ensure that each such licence holder meets its responsibility.

This is not relevant as Sri Lanka does not have nuclear installations. However as per section 24 of the Act, It shall be the primary duty of the licensee to establish and implement the technical and organizational measures required for the protection of human life 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.

Article 10: Priority to safety

Each Contracting Party shall take the appropriate steps to ensure that all organizations engaged in activities directly related to nuclear installations shall establish policies that give due priority to nuclear safety.

This is not relevant as Sri Lanka does not have nuclear installations.

Article 11: Financial and human resources

- 1. Each Contracting Party shall take the appropriate steps to ensure that adequate financial resources are available to support the safety of each nuclear installation throughout its life.**
- 2. Each Contracting Party shall take the appropriate steps to ensure that sufficient numbers of qualified staff with appropriate education, training and retraining are available for all safety-related activities in or for each nuclear installation, throughout its life.**

This is not relevant as Sri Lanka does not have nuclear installations.

Article 12: Human factors

Each Contracting Party shall take the appropriate steps to ensure that the capabilities and limitations of human performance are taken into account throughout the life of a nuclear installation.

This is not relevant as Sri Lanka does not have nuclear installations.

Article 13: Quality assurance

Each Contracting Party shall take the appropriate steps to ensure that quality assurance programmes are established and implemented with a view to providing confidence that specified requirements for all activities important to nuclear safety are satisfied in each stage of the life of nuclear power plant such as siting, design, construction, commissioning, operation and de-commissioning.

This is not relevant as Sri Lanka does not have nuclear installations.

Article 14: Assessment and Verification of Safety

Each Contracting Party shall take the appropriate steps to ensure that:

- i. comprehensive and systematic safety assessments are carried out before the construction and commissioning of a nuclear installation and throughout its life. Such assessments shall be well documented, subsequently updated in the light of operating experience and significant new safety information, and reviewed under the authority of the regulatory body;**
- ii. verification by analysis, surveillance, testing and inspection is carried out to ensure that the physical state and the operation of a nuclear installation continue to be in accordance with its design, applicable national safety requirements, and operational limits and conditions.**

This is not relevant as Sri Lanka does not have nuclear installations.

Article 15: Radiation protection

Each Contracting Party shall take appropriate steps to ensure that in all operational states the radiation exposure to the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed the prescribed national dose limits.

This is not relevant as Sri Lanka does not have nuclear installations. However Regulations on Ionizing Radiation Protection of the Atomic Energy Safety Regulations No.1 of 1999 describe requirements for radiation protection in the use of ionizing radiation in medicine, industry, research and teaching.

The dose limits recommended by the above regulations are as follows.

Dose limits for exposures incurred from practices

1. Occupational exposure

1.1 For occupational exposure of workers over the age of 18 years, the dose limits are:

- (a) An effective dose of 20 mSv per year averaged over five consecutive years (100 mSv in 5 years) and of 50 mSv in any single year;
- (b) An equivalent dose to the lens of the eye of 150 mSv in a year; and
- (c) An equivalent dose to the extremities (hands and feet) or the skin² of 500 mSv in a year.

1.2. Dose limit applicable for pregnant or a breast feeding woman shall be as same as the dose limit recommended for general public

1.3. For occupational exposure of apprentices of 16 to 18 years of age who are trained for employment involving exposure to radiation and for students of age 16 to 18 who use sources in the course of their studies, the dose limits are:

- (a) An effective dose of 6 mSv in a year;
- (b) An equivalent dose to the lens of the eye of 50 mSv in a year;
- (c) An equivalent dose to the extremities (hands and feet) or the skin of 150 mSv in a year.

1-2. Public exposure

For public exposure, the dose limits are:

- (a) An effective dose of 1 mSv in a year;
- (b) In special circumstances, a higher value of effective dose in a single year could apply, provided that the average dose over five consecutive years does not exceed 1 mSv per year;
- (c) An equivalent dose to the lens of the eye of 15 mSv in a year; and
- (d) An equivalent dose to the skin of 50 mSv in a year.

I-3. Compliance with dose limits

- (a) The effective dose limits specified in this schedule apply to the sum of the relevant doses from external exposure in the specified period and the relevant committed doses from intakes in the same period; the period for calculating the committed dose shall normally be 50 years for intakes by adults and shall be up to age 70 years for intakes by children.
- (b) For occupational exposure, the personal dose equivalent $H_p(10)$ may be used as an approximation of the effective dose from external exposure to penetrating radiation.

Article 16: Emergency preparedness

1. Each Contracting Party shall take the appropriate steps to ensure that there are onsite and off-site emergency plans that are routinely tested for nuclear installations and cover the activities to be carried out in the event of an emergency.

For any new nuclear installation, such plans shall be prepared and tested before it commences operation above a low power level agreed by the regulatory body.

2. Each Contracting Party shall take the appropriate steps to ensure that, insofar as they are likely to be affected by a radiological emergency, its own population and the competent authorities of the States in the vicinity of the nuclear installation are provided with appropriate information for emergency planning and response.

3. Contracting Parties which do not have a nuclear installation on their territory, insofar as they are likely to be affected in the event of a radiological emergency at a nuclear installation in the vicinity, shall take the appropriate steps for the preparation and testing of emergency plans for their territory that cover the activities to be carried out in the event of such an emergency.

16.3 Emergency response activities in Sri Lanka

Since Sri Lanka doesn't have nuclear installations in its territory, and closest nuclear installation which is in India located around 220 km away from Sri Lanka, immediate threat to life of the Sri Lankan population and the environment is not expected due to nuclear emergency that may happened in a neighbouring country. However, a severe accident if occurred, long term consequences may be expected. Therefore, Sri Lanka is in the process of developing a nuclear or radiological emergency management plan to face such emergencies

16.3.1 National laws on nuclear or radiological emergency management plans

Disaster Management Centre established under Sri Lanka Disaster Management Act No 13 of 2005 is responsible for adoption and execution of national nuclear or radiological disaster management plan. This Act also requires that all the technical organizations which

has competency on nuclear technology shall provide assistance to the Disaster Management Centre to mitigate the consequences of a nuclear or radiological emergency.

Under the section 58 of the Atomic Energy Act, the Council is authorized to develop a National Nuclear or Radiological Emergency Management Plan (hereinafter referred to as the “Emergency Management Plan”) for responding to potential nuclear or radiological emergencies at national level in accordance with the provisions of the Sri Lanka Disaster Management Act, No. 13 of 2005. The Atomic Energy Act states that once the plan is prepared, the plan should be adopted in accordance with the provisions of the Sri Lanka Disaster Management Act, No. 13 of 2005

The Atomic Energy Act also provides that the Council shall assist and advice the Disaster Management Centre established under section 8 of the Sri Lanka Disaster Management Act, No. 13 of 2005, in the implementation of the Emergency Management Plan so prepared and adopted, during any intervention carried out by such Centre, in the event of any nuclear or radiological emergency. The Atomic Energy Act states that in the event a nuclear or radiological emergency occurs within Sri Lanka which poses a risk that radioactive contamination could spread beyond the boundaries of the Republic of Sri Lanka, the Council shall immediately notify such emergency to the IAEA and to any relevant authorities of any State which may be physically affected by such contamination. The Atomic Energy Act also states that the Council shall serve as the point of contact for Providing any information or assistance regarding nuclear or radiological emergencies in terms of any relevant international instruments, including the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

Therefore, it is required to establish the procedures to notify these authorities in above plans.

16.3.2 Roles and Responsibilities of the Council

According to Sri Lanka Atomic Energy Act No 40 of 2014, the council is the Lead Technical Agency (LTA) for management of radiological or nuclear emergencies in the country. The council possesses resources and capability (equipment, laboratory facilities and trained staff etc.) to carryout radiological assessments and to provide protective actions and necessary recommendations.

The Council is the IAEA Point of Contact (POC) for responding to radiological and nuclear emergency issues and also functions as the National Warning Point and National Competent Authority (Abroad)-NCA (A) and NCA Domestic (D) for coordinating with IAEA on international radiological or nuclear emergency alert and warnings.

The Council is also the regulatory authority for licensing and inspection of radiation facilities and has the responsibility for ensuring that all facilities with radiation sources have the emergency plans in place.

16.3.3 National and institutional Nuclear or Radiological Emergency Management/operation Plan

The Council has taken a decision in consultation with the DMC to develop Emergency Management /operation Plans as follows

(a) National Nuclear or Radiological Emergency Management plan

This plan describes the national response procedure identifying role of each stakeholder for mitigation of a nuclear or radiological emergency from notification of an emergency till declaration of closer of the emergency. This plan is under development in collaboration with the DMC.

(b) Institutional Nuclear or Radiological Emergency Operation plans

Development of these plans are coordinated by the Council as it is a licence condition to prepare and testing of an institutional emergency plans. These plans are also under development.

16.3.4 Council's Nuclear or Radiological Emergency Operation Plan

The Council is in the process of developing an emergency operation plans based on the IAEA Safety Standards for Preparedness and Response to Nuclear or Radiological Emergency Requirements in GS-R-7 of 2015 and Method for developing arrangements for response to a Nuclear or Radiological Emergency (EPR Method 2003, updated version of IAEA Tecdoc 953). This plan describes activities to be carried out by the Council as the LTA to mitigate consequences of an emergency and method for continuing its activities admit severe national natural or artificial emergency which can affect the Council's day to day functions.

According to GSR part 7, five threat categories are introduced for emergency response. Since Sri Lanka is a non-power country, the Council has decided to develop its emergency operation plan to meet Emergency Response categories (EP category) 3,4 and 5. The draft plan is prepared and under review.

16.3.5 Nuclear Disaster Early Warning System (NDEWS)

Nuclear Disaster Early Warning System (NDEWS) has been established in Sri Lanka by the Atomic Energy Authority (AEA) in 2012 (predecessor of the Council) with the Technical Cooperation of the IAEA .

The system was donated by the IAEA through the technical cooperation project titled "the developing national capability to respond to Nuclear or radiological emergencies in Sri Lanka". All the equipment and accessories were received from the Saphymo GmbH of

Germany. Assembling the equipment, testing the system and personal training was provided by the Saphymo GmbH.

The NDEWS helps to identify possible nuclear emergencies that release radioactive material to populated areas of Sri Lanka from a nuclear installation in neighbouring country and provides the basis for radiological emergency response and early warning to the public through the disaster management system of Sri Lanka.

As the first stage of this National Project, AEA established 08 Remote Monitoring Stations (RMS) for continuous radiation monitoring at the environment and transmission of the collected ambient gamma radiation levels by the RMS to the Central Monitoring Station (CMS), which is located at the Sri Lanka Atomic Energy Board premises.

Out of the eight stations, six were installed at the strategic locations around the country in Northern, Southern, Eastern, Western and North-Western, coasts in Sri Lanka. Sri Lanka Navy has given their fullest cooperation to locate 06 RMS at the navy bases at Kalpitiya, Thalai Mannar, Delft Island, Kankasanthurai, Galle and Trincomalee, and the 07th RMS is in Colombo at the premises of SLAEB and 8th one is located at the University of Peradenya in Kandy.

The RMS consists of sensitive guiger-muler counters for the measurement of ambient gamma radiation levels in the environment, a solar panel for continuous power supply, GPS and data transmission system, temperature and rain gauges. The measured data (radiation levels, temperature and precipitation condition) will be transferred to the Central Monitoring Station through GSM mode (SMS). The CMS consists with a server connected to a computer monitor, GSM antenna and UPS with a data analysis soft where. The measured data will be visualized by the screen and, if abnormal radiation levels would be received will be highlighted by an alarm. Sri Lanka Mobitel provides SMS service to this system.



A photo of a Radiation Monitoring Station

Article 17: Siting

Each Contracting Party shall take the appropriate steps to ensure that appropriate procedures are established and implemented:

- i. for evaluating all relevant site-related factors likely to affect the safety of a nuclear installation for its projected lifetime;**
- ii. for evaluating the likely safety impact of a proposed nuclear installation on individuals, society and the environment;**
- iii. for re-evaluating as necessary all relevant factors referred to in sub-paragraphs (i) and (ii) so as to ensure the continued safety acceptability of the nuclear installation;**
- iv. for consulting Contracting Parties in the vicinity of a proposed nuclear installation, insofar as they are likely to be affected by that installation and, upon request providing the necessary information to such Contracting Parties, in order to enable them to evaluate and make their own assessment of the likely safety impact on their territory of the nuclear installation.**

This is not relevant as Sri Lanka does not have nuclear installations.

Article 18: Design and construction

Each Contracting Party shall take the appropriate steps to ensure that:

- i. the design and construction of a nuclear installation provides for several reliable levels and methods of protection (defence-in-depth) against the release of radioactive materials, with a view to preventing the occurrence of accidents and to mitigating their radiological consequences should they occur;**
- ii. the technologies incorporated in the design and construction of a nuclear installation are proven by experience or qualified by testing or analysis;**
- iii. the design of a nuclear installation allows for reliable, stable and easily manageable operation, with specific consideration of human factors and the man-machine interface.**

This is not relevant as Sri Lanka does not have nuclear installations.

Article 19 : Operation

Each Contracting Party shall take the appropriate steps to ensure that:

- i. the initial authorisation to operate a nuclear installation is based upon an appropriate safety analysis and a commissioning programme demonstrating that the installation, as constructed, is consistent with design and safety requirements;**
- ii. operational limits and conditions derived from the safety analysis, tests and operational experience are defined and revised as necessary for identifying safe boundaries for operation;**
- iii. operation, maintenance, inspection and testing of a nuclear installation are conducted in accordance with approved procedures;**
- iv. procedures are established for responding to anticipated operational occurrences and to accidents;**
- v. necessary engineering and technical support in all safety-related fields is available throughout the lifetime of a nuclear installation;**
- vi. incidents significant to safety are reported in a timely manner by the holder of the relevant licence to the regulatory body;**
- vii. programmes to collect and analyse operating experience are established, the results obtained and the conclusions drawn are acted upon and that existing mechanisms are used to share important experience with international bodies and with other operating organizations and regulatory bodies;**
- viii. the generation of radioactive waste resulting from the operation of a nuclear installation is kept to the minimum practicable for the process concerned, both in activity and in volume, and any necessary treatment and storage of spent fuel and waste directly related to the operation and on the same site as that of the nuclear installation take into consideration conditioning and disposal.**

This is not relevant as Sri Lanka does not have nuclear installations.