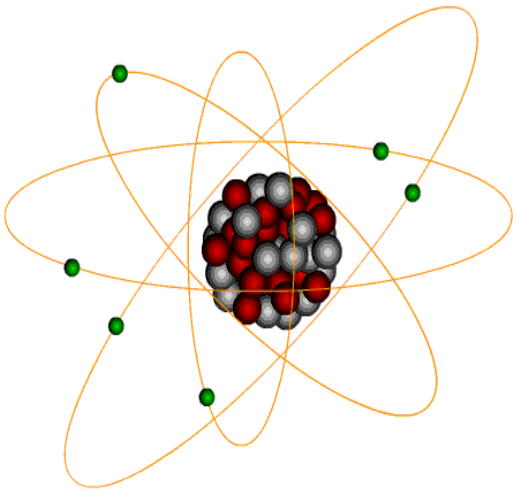
ANNUAL REPORT - 2015

SRI LANKA ATOMIC ENERGY BOARD



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ABOUT US

Sri Lanka Atomic Energy Board (SLAEB) is Government's premier Nuclear Science and Technology organization. Its prime objectives are to protect radiation workers, general public and environment from unwarranted exposures to ionizing radiation and to apply nuclear science and technology through provision of services, technology transfer, R & D activities and HR development in the fields of health, industry, agriculture, environment, and security through International collaboration for supporting to achieve for National Development Goals.

VISION

Sustainable Development of the Nation through Nuclear Science and Technology.

MISSION

Promote and encourage peaceful applications of nuclear technology and utilize its benefits for socio-economic development of the country while ensuring safety, security and quality

And

Provide radiation protection services to facilitate protection of workers, public and environment from exposure to unwarranted ionizing radiation.

BOARD OF MANAGEMENT

The SLAEB is managed by a Board of Management appointed in terms of Section 6 of the Sri Lanka Atomic Energy Act No. 40 of 2014. The Members of the Board of Management from January to December 2015 were:

01.01.2015 – 10.12.2015

Mr. Lakshitha Jayawardana – Chairman
Attorney-at-Law

Prof. H.Y. Ranjith Perera - Member
Senior Professor, University of Moratuwa

Dr. G.A.S. Premakumara - Member
Chief Executive Officer – Industrial Technology Institute

Mr. M.G.A.Goonetilleke - Member
Additional Secretary (Technical), Ministry of Power & Energy

Mr. A.P.Kurumbalapitiya - Member
Director, Department of State Accounts

Dr. Upul M. Gunasekara - Board Member
Public Relation Officer, Ministry of Health

Dr. Mrs.Methika Vithanage - Member
Research Fellow, Institute of Fundamental Studies

10.12.2015 – 31.12.2015

Mr. Lakshitha Jayawardane - Chairman
Attorney-at-Law

Prof. S.R.D. Rosa - Member
Professor, University of Colombo

Dr. J.M.C. Udugama - Member
Consultant/Medical Doctor in Nuclear Medicine

Mr. Chanuka Wattegama - Member
Consultant/Senior Lecture, NIBM

Mr. A.P. Kurumbalapitiya - Member
Director, Department of State Accounts

Mr. Sampath Chandrasena - Member
Network Manager, National Centre for Advance Studies

Mr. G.L.R. Prasanga - Member
Research Assistant, University of Sri Jayewardenepura

Senior Management

Name	Title	Qualification
Mr.D.G.L.Wickramanayake Mr.C.Kasige	Director General 01.01.2015 to 21.08.2015 Director General 22.08.2015 to 31.12.2015	B.Sc. (Colombo M.Sc. (Colombo) B.Sc. (Special)(Peradeniya) M.Sc. (Colombo)
Mr. C. Kasige	Director (General Scientific Division) 01.01.2015 to 21.08.2015	B.Sc.(Special) (Peradeniya) M.Sc. (Colombo)
Mr.VajiraWaduge	Director (Life Sciences Division)	B.Sc. (Peradeniya) M.Sc.(Colombo)
Mr. M.M.P. Wijesekera	Acting Senior Deputy Director (Finance & Administration)	Certified Business Accountant (CBA) DBM (NIBM)
Mrs.S.S.Kulatunga	Director (Multipurpose Gamma Irradiator Facility)	B.Sc. (Colombo) M.Sc.(Colombo)
Mr.T.M.R.Tennakoon	Director (National Centre for NDT)	B.Sc. (Colombo) M.Sc.(Colombo)
Ms.M.C.S.Seneviratne	Quality Manager	B.Sc (SJP),Msc (Col.)

01. Chairman's Review

It is with great pleasure that we present Financial Statements - 2015 of the Sri Lanka Atomic Energy Board (SLAEB) with summary of main activities including achievements during said year.

The SLAEB has continued to translate the outputs of its research and services into benefits for protection of radiation workers, general public, environment, industry, and to establish the nuclear research and service infrastructure needed to deliver services needed for the country.

SLAEB's nuclear science and technology research efforts this year included the development of an environmental radiation baseline database for protection of environment and a marine radioactive database for protection of marine ecosystem.

The activities of the SLAEB during the year 2015 are reported under the areas (a) Nuclear Instrumentation, (b) Secondary Standard Dosimetry, (c) Personal monitoring for occupational exposures, (d) Nuclear Disaster Early Warning Programme (e) Non-Destructive Testing Services (f) Nuclear Analytical Services, (g) Isotope Hydrology, (h) Gamma Irradiation Service by Sri Lanka Gamma Centre and (i) Programmes of the International Atomic Energy Agency (IAEA). (j) Radiation Processing Activities.

Nuclear Instrumentation

It is an essential pre-requisite to maintain nuclear instruments in proper operating condition, for the optimum utilization of invested resources such as instruments and man power for socio economic development of the country. The Nuclear Instrumentation Programmes of the General Scientific Division (GSD) provides the necessary support services and advice in maintaining nuclear instruments in order to derive benefits of nuclear technology to Sri Lankan community.

The number of repairs & maintenance services of Nuclear Instruments carried out was 69. The GSD has undertaken 160 issues related to software and hardware maintenance of computers and network related services.

Accredited Secondary Standard Dosimetry Laboratory and its services

Radiation standards required to provide radiation protection services to the country is maintained at Accredited Secondary Standard Dosimetry Laboratory (SSDL). This laboratory provides services in compliance with ISO/IEC 17025:2005 Standards. This is an essential laboratory to facilitate to ensuring radiation safety of workers, general public and environment.
The number of certifications issued on Secondary Standard Dosimetry calibrations to SLAEB and other institutions by SSDL in 2015 was 69.

Accredited Personal Monitoring Service Laboratory for occupational safety of workers in the country

Personal Monitoring Service is to measure occupational exposures of radiation workers in the country to facilitate radiation safety. Monitoring of occupational exposures is a mandatory and employers who are dealing with radiation and radiation apparatus shall obtain this service for their radiation workers. Quality Management System developed in compliance with ISO / IEC 17025:2005 for personal monitoring services laboratory received accreditation from Sri Lanka Accreditation board in June 2014. Accreditation status is maintained with continued improvements and 937 radiation workers were monitored on monthly/ bimonthly basis.

Maintenance of Nuclear Disaster Early Warning System: Online detector systems installed at eight monitoring stations located at Colombo, Puttlam, Thalai Mannar, Delft, Kankasanthurai, Trincomalee, Galle and Peradeniya for early detection of radiation levels from trans-boundary dispersion of radioactive material due to possible nuclear accidents in neighboring countries are maintained for protection of general public & environment.

Radiological & Nuclear Emergency response Program: Four training and awareness programmes on Nuclear Security & Chemical Biological Radiological & Nuclear (CBRN) response and Radiological & Nuclear Emergency response were implemented in Presidential Security Division of Sri Lanka Police at Kumbuka, Horana, Post Graduate Medical Students at PGIM Colombo, the Police In-service training division at Colombo, Kandy and Galle, and Sri Lanka Army Engineering Services Camp at Maththegoda. Baseline data on environmental radiations & Radon analysis was carried out in Nothern Province and Matale district in order to access radiation risk to public.

The National Centre for Non Destructive Testing (NCNDT) provides training, certification and inspection services on NDT and related techniques following the international standards to support consistent technological development through improving productivity of the industry in the country.

Three hundred and fifty five (**355)** personnel were trained and earned Rs. 4,955,160 during the year 2015. NCNDT provided NDT inspection services to industry in order to detect defects in machinery and metallic components to ensure industrial safety and to improve industrial productivity. Totally NCNDT provided **243** NDT inspection services to Government and Private Sector industries in 2015 and generated Rs. 15183703 as an income to the Centre.

One of the major inspections NCNDT carried out in 2015 was NDT inspection of 07 storied building at Negombo Base Hospital. This building had been proposed to be destroyed. However, SLAEB jointly with the Civil Engineering Department of the University of Moratuwa tested and investigated the building using nuclear technique and proposed that the building could be re-used after some repairs, which saved millions of Rupees to the country. Other major inspection NCNDT carried-out was unit 1 of Norochcholei Coal Power Plant, which in the previous years were carried out by the Chinese. However, this time NCNDT of the SLAEB was able to carry-out this inspection. With these inspection services, it was possible to save millions of Rupees to the country.

Life Science Division:

The Life Science Division (LSD) provides its services to the import & export sector, industrial sector, research and academic institutes through the utilization of nuclear and associated analytical methodologies. The Analytical Services Section of LSD has analyzed more than 7500 samples (milk food, frozen fish and canned fish, tea and other food commodities and other customer based samples) generating total income of Rs. 39.3 million in 2015. The two major Nuclear Analytical Laboratories of LSD, Low Level Counting Laboratory for Gamma spectrometry and X-ray Fluorescence (XRF) analytical laboratory have maintained the accreditation status in compliance with ISO/IEC 17025:2005 international Standards.

Sri Lanka Gamma Centre:

During the year 2015, it has successfully provided the gamma irradiation service mainly to the health care and food processing sectors of the country. The total volume of surgical gloves irradiated in SLGC is 3,302 m^3 and 22,875 kg of food items were irradiated for export market. Total income generated through above services provided by SLGC was Rs.44 Mn. while contributing to retain the foreign exchange within the country by minimizing the import of sterilized gloves to the National Health Sector in the year 2015. Sri Lanka Gamma Centre achieved the GMP certificate, ISO 9001:2008 and ISO 13485 quality management system from TUV SUD Certification body in USA.

Isotope Hydrology Section of the SLAEB has provided its services to the water sector institutes and dam owner institutes on the nationally important research studies in 2015. Among them, groundwater development study in Jaffna peninsula, groundwater investigations in Chronic Kidney Disease endemic zones in the dry zone, groundwater quality deterioration study in Mannar and baseline survey of natural groundwater flows in Moragahakanda reservoir area are prime important. Collection of baseline isotope indices of rain in the dry zone has been completed for the purpose of investigating groundwater sources in the dry zone in future. Ion chromatography method for major ion analysis in water and radon method for groundwater discharge studies were also established to strengthen the isotope hydrology program of the SLAEB. It has earned Rs 2.4 Million from the above projects and analytical services provided to the national and international institutions and organizations.

R & D on Radiation Processing:

The Chito Power product which was received the first place under the open category in the field of environment at the competition held in the "SAHASAK NIMEVUM-2014" was successfully used to control root infection of Pepper plants due to Phytophthora infestans at the Hathamunagala Estate and to control the diseases of vegetable fields in Bandarawela under the supervision of Horticultural Crops Research and Development Institute (HORDI), Gannoruwa.

International Cooperation Division:

This Division functions as the National Liaison Office to the International Atomic Energy Agency (IAEA) and it coordinates all activities related to implementation of IAEA Technical Cooperation Programme in order to obtain technical assistance which is required to develop nuclear science and technology which leads to socio-economic development of the country. Human Recourses Development is an essential and important element of any activities and Sri Lanka was able to obtain 22 expert services, 19 fellowships & scientific visits and 127 participants participated in short term overseas training courses, workshops, meetings and 03 seminars organized under the International Atomic Energy Agency Technical Cooperation Programme. Training opportunities were also obtained under MEXT programme of Japan and RCARO in Korea in order to train our scientists in institutes in excellence in Japan and Korea in related subjects.

RCA projects for national development:

Regional Cooperative Agreement (RCA) among Government parties in Asia and Pacific Region for cooperative research and training in the field of nuclear science and technology. During the year, SLAEB continued to assist national institutions through Regional Cooperative Agreement (RCA) projects. Main projects carried out by SLAEB scientists in collaboration with other relevant national institutions are (a) investigating the use of nuclear and isotopic techniques to measure the impact of land-use practices on land degradation, (b) Investigating the source of air particulate pollution, (c) the development and management of groundwater resources, (d) the possible impact of the releases of radioactivity from the Fukushima Daiichi nuclear power plant into the marine environment, and (e) the application of radiation processing technologies for improvement of agricultural productivity.

Sri Lanka was able to got approved five national projects in the field of nutrition (University of Colombo), Non Destructive Testing (National Centre for Non Destructive Testing), Institutional and Capacity building (Sri Lanka Atomic Energy Board), Veterinary Medicine (University of Peradeniya), Radiation Medicine and Health (University of Kelaniya) which are to be implemented under IAEA TC 2016-2017 cycle. Sri Lanka will be able to obtain approximately Sri Lankan Rupees 150 Million worth of technical assistance under these projects during 2016 and 2017 and such assistance is provided by IAEA in the forms of Human Resources Development (Fellowship, Scientific Visit, Expert Missions) and equipment.

Bilateral agreements/MOU were signed with India and Pakistan to exchange the knowledge among the countries during the year 2015.

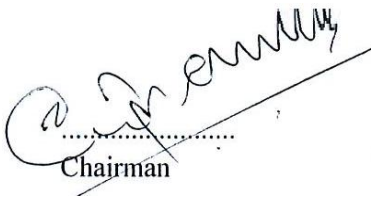
Financial Highlights

Income from the external customer services provided in 2015

(Values in Rs.mn.)

	Income Source	Target	Actual
01	Sri Lanka Gamma Centre	56.0	44.3
02	Nuclear Analytical Services	36.0	39.2
03	National Centre for Non-Destructive Testing	16	24.6
04	Nuclear Instrumentation/Personal Monitoring	1.0	1.3
05	Isotope Hydrology Section	1.0	2.2
07	Miscellaneous	1.0	1.0
	Total	**111**	**112.6**

I would like to thank Board of Management, Senior Management and staff of the SLAEB for their contribution made to fulfill the planned activities for the year 2015.



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Chairman

Sri Lanka Atomic Energy Board

02. Audit and Management Committee Reviews 2015

The Audit and Management Committee is constituted in accordance with PED Circular No.55 dated 14.12.2010 issued by the Department of Public Enterprises, the Ministry of Finance and Planning.

The Audit and Management Committee of the Sri Lanka Atomic Energy Board for the year 2015 comprised of the following members of the Board of Management of SLAEB who possess a wide range of experience in Scientific, Finance and Administration Fields.

a) Mr.A.P.Kurumbalapitiya	Chairman to the Audit and Management Committee.	
b) Prof. H.Y.Ranjith Perera	Committee Member	Up to October 2015
c) Dr.G.A.S. Premakumara	Committee Member	
d) Dr.Upul M.Gunasekara	Committee Member	
e) Prof.S.R.D.Rosa	Committee Member	From November 2015
f) Mr.Chanuka Wattegama	Committee Member	

Above six members are Members of the Board of Directors of Sri Lanka Atomic Energy Board

A representative of the Auditor General (Mr.A.L.J.Wimalarathne) and Chief Internal Auditor of the Ministry of Power and Renewable Energy (Mr.S.K.Malawisooriya) also attend meetings as observers.

Internal Auditor acts as the convener and the Board Secretary / Legal officer acts as the Secretary of the Audit and Management Committee. Mr. D.G.L Wickramanayake, former Director General, Mr.C.Kasige, Director General and M.M.P.Wijesekara, Acting Senior Deputy Director Finance and Administration also participate at committee Meetings.

Scope of the Committee
Having considered the objectives defined in the Public Enterprise Circular No. PED 55 dated 14.12.2010 and in the 'Guideline for Good Governance' of the Department of Public Enterprise, the Audit Committee made maximum effort to achieve the objectives, mentioned in the above circular.

The committee fulfilled the requirements and the guidelines sent by the Department of Public Enterprises in conducting Audit and Management Committee Meetings.

Activities of the Committee during 2015
The Committee formally met four times during the year under review. The Audit and Management Committee reviewed and discussed the reports submitted by the Government Audit and Internal Audit carried out in the areas of operational and financial reviews. The Audit Committee have reviewed these reports using their extensive experience and expertise, recommended additional controls and strategies that could be implemented where necessary to strengthen the existing internal control systems thus minimizing the possibility of occurrence and impact of fraud and errors, operational and financial risks faced by the entity.

The committee also reviews the internal audit functions with particular emphasis on the planning of the audit and scope of the audit. Further committee emphasis the importance of systems audit and recommended to carry out System Audit from next year.

The minutes of the Audit and Management Committee meetings are tabled at the subsequent meeting of the Board of Directors for their information.

Mr.A.P.Kurumbalapitiya
Chairman to the Audit and Management Committee (Treasury Representative)

03. International Cooperation Division

International Cooperation Division of Sri Lanka Atomic Energy Board (SLAEB) functions as the national focal point for the International Atomic Energy Agency (IAEA) which is widely known as the world's "Atoms for Peace" organization within the United Nations family. International Cooperation Division coordinates activities with IAEA in order to obtain technical assistance under its Technical Cooperation (TC) Programme. The IAEA delivers its technical assistance to the Member Sates under various projects which are in following nature. This division also coordinates activities with other international organizations (RCARO in South Korea and JAEA, MEXT, WERC in Japan, and ICTP etc.), bilateral discussions with IAEA Member States (MS) and Nuclear Knowledge Management (NKM activities etc.

3.1 IAEA Technical Cooperation (TC) Programme

- National Projects
- Regional Cooperative Agreement (RCA) Projects
- Non-Agreement Regional Projects
- Inter Regional projects

3.1.1 National Projects

The IAEA national TC projects were formulated in line with the Country Programme Framework (CPF) which reflects national priority areas for socio-economic development of the country where nuclear technology can be used.

During the year 2015, fifteen (15) total national TC projects were coordinated and obtained technical assistance to various national counterpart institutes in Sri Lanka

TC cycle 2014-2015

Following five (5) national projects were approved by the IAEA to implement in year during 2014/ 2015 cycle. In addition to these five projects there were another 10 projects at the implementation stage as they were not complete during pre-planned project cycle or non- availability of allocated funds per projects.

Project No	Project Title	Counterpart Institute
SRL1008	Providing Technical Support for Smooth, Safe and Sustained Operation of the Multipurpose Gamma Irradiation Facility	Sri Lanka Gamma Center, SLAEB
SRL5045	Establishing a National Centre for Nuclear Agriculture	Department of Agriculture and SLAEB
SRL6034	Strengthening Nuclear Medicine Procedures for Radionuclide Therapy to Improve Clinical Outcome of Patients with Cancer and Chronic Joint Diseases	Nuclear Medicine Unit, University of Peradeniya
SRL7005	Establishing a National Centre for Marine Pollution Control	Marine Environmental Protection Authority and SLAEB
SRL9010	Strengthening Radiation Protection in Diagnostic Radiology and Promoting Audit and Safe Use of Diagnostic Medical Radiation	National Hospitals of Sri Lanka

Above counterpart institutes obtained IAEA technical assistance in the form of fellowship, scientific visits, expert missions and equipments during 2015 under the activities of relevant projects through the International Cooperation Division of the SLAEB.

TC cycle 2016-2017

International Cooperation Division coordinated with the IAEA and other local organizations and submitted 15 project proposals to the IAEA which are to be considered for 2016/17 cycle. Among those proposals five were selected by the IAEA according to the national priority areas for further development through the IAEA web based platform.

All the work related to the journey of project proposals to become complete projects was coordinated by the International Cooperation Division from 2014 to 2015. These projects will be implemented during year 2016 – 2017 and Following are the selected national TC projects approved by the IAEA.

	Project Title	**Counterpart Institute**
1	Strengthening of Nuclear Analytical capabilities of the Atomic Energy Authority	Atomic Energy Authority
2	Establishment of a Regional Centre for Research and Training in Medical and Molecular Entomology for vector-borne disease control	Molecular Medicine Unit, Faculty of Medicine, University of Kelaniya
3	Improving Live hoods Through Dairy Cattle Production: Women Farmer's Empowerment in Rural Sri Lanka	Faculty of Veterinary Medicine and Animal Science, University of Peradeniya
4	Reducing Cardio metabolic Risk In Sri Lankans Through Addressing Adolescent Health And Nutrition	Department of Physiology, Faculty of Medicine, University of Colombo
5	Continuation of the Project on Strengthening of Non Destructive Testing (NDT) through Establishment of a National Centre for NDT (NCNDT)	National Centre for NDT, Atomic Energy Authority

3.1.2 Regional Cooperative Agreement (RCA) Projects

The Regional Cooperative Agreement for promote, coordinate and implement cooperative research, development and training projects in the peaceful application of nuclear science and technology for Asia and the Pacific (RCA) is an intergovernmental agreement among the IAEA Member States that are located in South Asia, South East Asia and the Pacific, and the Far East.

Mr. Cyril Kasige, Director General, SLAEB has been appointed as the new National Representative (NR) for RCA.

During the period total twenty four (24) RCA projects were handed by the Division. These projects mainly for human resource development by proving opportunities for local scientists and other officers to attend training, meeting and workshops at the institutions of excellence in the fields of industry, medicine, agriculture in Member States of the IAEA where radiation technology is used and secondarily for providing expert services and some parts of equipments. Among those 24 RCA projects, eleven (11) projects were completed at the end of the year 2015.

3.1.3 Non-Agreement Regional Projects

Number of projects implemented during 2015 which are belongs to this category are total 29. Non-Agreement Regional Projects out of the RCA are and formulated to address regional issues by enhancing HR development.

3.1.4 Inter Regional projects

Two Inter Regional projects were implemented during the above period. These projects planned to address prevailing issues not only in this regional but also other regions. Usually many countries are participating to these kinds of Projects.

In addition to activities of above mentioned project categories, IAEA provides opportunities for its MS's officers who are working in the field of Nuclear Science & Technology to obtain international exposure by attending training, workshop, meeting, symposia and conferences.

3.2 International Cooperation obtaining from other Foreign Institutes

In addition to the technical assistance received from IAEA, SLAEB have received several foreign training opportunities from Ministry of Education, Culture, Sports, Science & Technology (MEXT) in

Japan, Korea International Cooperation Agency (KOICA) and Regional Cooperative Agreement Regional Office (RCARO) in South Korea, International Centre for Theoretical Physics in Italy etc.

Statistics of the International Cooperation Division

	SLAEB	Other
Fellowships & Scientific Visits	07	12
Short term overseas training/ meetings/ conferences/ workshops/ Symposia and Inspections	48	79
International events hosted in Sri Lanka	01	02
Expert Missions	22	

3.3 Hosting of IAEA Events in Sri Lanka

The International Cooperation Division facilitated administrative and logistic support for project counterparts/counterpart institute to host three (3) IAEA events in Sri Lanka during the year 2015 and details are given below.

Project No	Event	Duration
RAS/6/075	Regional Training Course on Principles and Practice of Pediatric Nuclear Medicine and Application of Radionuclide Techniques in Pediatric Nephro-Urology Practice	20-24 July 2015
RAS/5/055	IAEA/RCA Regional Training Course on Integrated Soil Conservation Practices to Mitigate Soil Erosion and the Role of Nuclear Techniques	27-31 July 2015
SRL/9/010	National Workshop on Radiation Protection and Optimization of Patient Exposure in Imaging.	07-11 December 2015

As these events were held in Sri Lanka, SLAEB was able to offer opportunities for many Sri Lankan scientists and researchers to obtain training and exchange ideas with experts and scientists who came from various countries.

3.4 Coordination of Bilateral Discussion with the IAEA Member States

The International Cooperation Division coordinated bilateral discussions with Pakistan and India to obtain technical assistance in order to develop nuclear science and technology applications in Sri Lanka.

3.4.1 Bilateral Discussion with Pakistan

A Memorandum of Understanding (MOU) was signed by Hon. Mangala Samaraweera, Minister of Foreign Affairs and Hon. Sartaj Aziz, Advisor to the Prime Minister of Pakistan on National Security and Foreign Affairs, on 6th April 2015 in Islamabad, Pakistan.

Sri Lanka Atomic Energy Board (SLAEB) has appointed following officers as joint committee members from Sri Lanka.

1. Chairman, SLAEB.
2. Director General, SLAEB
3. Director, National Center of Non Destructive Testing(NCNDT), SLAEB
4. Deputy Director, International Cooperation, SLAEB

First joint committee meeting was held on 07 and 08 December 2015 at the NCNDT building with the participation of Pakistan joint committee members who are from Pakistan Atomic Energy Commission (PAEC). Main purpose of this meeting was to identify specific projects by both parties which are to be considered for sharing knowledge, expertise and resources in relation to the field of atomic energy & nuclear technology.

3.4.2 Bilateral Discussion with India

"Agreement between the Democratic Socialist Republic of Sri Lanka and the Republic of India on Cooperation in the Peaceful Uses of Nuclear Energy" was signed by Hon. Minister of Power and Energy of Sri Lanka and Secretary, Department of Atomic Energy of India during the State visit of H.E. the President on 16th February 2015, in New Delhi, India.

04. Activities of the General Scientific Services Division (GSSD)

Provision of Radiation Protection Services to meet regulatory requirements related to radiation applications and promotes and support innovations to ensure safety and security systems are two of the major objectives of Sri Lanka Atomic Energy Act No 40 of 2014. To achieve these objectives General Scientific Services Division (GSSD) carried out following activities in the year 2015.

4.1 Personal Monitoring Service to Monitor occupational exposures:

The main objective of this program is to ensure the safety of radiation workers in the country. It is a mandatory requirement for all users of radioactive material and irradiating apparatus to be monitored by personal monitoring devices.

Fig.4.1. TLD Reader

The General Scientific Services Division provided island wide individual radiation monitoring service using Thermo luminescence (TLD) dosimetry badges. Approximately 900 badges issued per survey period and annual income generated Rs. 975,050.00 for the year 2015. The GSSD personal monitoring laboratory was accredited with Quality Management System in compliance with ISO 17025:2005.

4.2 Secondary Standards Dosimetry Laboratory (SSDL)

Maintenance of Radiation Standards is essential for implementing radiation protection programme in the country. In order to ensure the safety of radiation workers, public and the environment accurate measurements of radiation in areas such as radiotherapy, diagnostic radiology, industry and other radiation protection services are essential. SSDL maintains radiation metrology standards which are link with International System of measurements. Those standards are used to provide instrument calibration service with required accuracy.

It is also a mandatory requirement that every institution where radiation is used to be calibrated their radiation monitoring devices/ instruments, for accurate measurement of radiation. 69 radiation monitoring instruments including in-house radiation monitoring instruments were calibrated in 2015 at the SSDL. Services are provided at subsided rates. The total income from SSDL in 2015 is Rs.290.500.00.

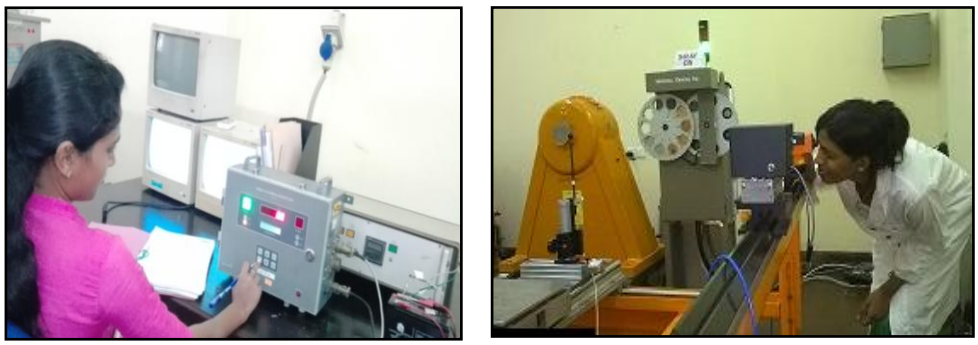


Fig 4.2. SSDL for calibration of radiation monitoring instruments

Other Services provided by SSDL

i. 900 TLDs were irradiated for quality assurance of Personal Monitoring program for measurement of occupational exposures.
ii. Therapy calibration service was provided to Cancer hospital, Maharagama and Teaching Hospital Anuradhapura for calibration of the therapy level instruments.
iii. Calibration work carried out at the radiotherapy unit at Teaching Hospital Anuradhapura to verify the accuracy of clinical beam of Co-60.
iv. Arrangements were made with IAEA for verification of accuracy of therapy beam for cancer treatment at the radio therapy centers in the country.
v. Regular Maintenance of reference and ancillary equipment and maintenance of reference radiation standards at SSDL.
vi. Arrangements have been made to obtain an X-ray system for protection level and diagnostic level calibration through IAEA TC project under cost sharing basis.
vii. Perform periodic tests to verify stability and accuracy of reference standards at SSDL. Continual improvement of Quality Management System of SSDL is being carried out.
viii. Arrangements were made to obtain IAEA assistance to verify accuracy and traceability of SSDL results.

4.3 Preparedness and Response to Radiological and Nuclear Emergencies

SLAEB is the main technical organization for response to radiological and nuclear emergencies. SLAEB is taking all steps for preparedness and response to radiological and nuclear emergencies. During the year 2015 following activities were carried out.

4.3.1 Preparedness for medical emergency response:

An expert mission including three day training course on “medical response to radiological emergency” was conducted for medical doctors and physicists. This programme was implemented as a result of the implementing IAEA regional project on “preparedness and response to radiological and nuclear emergencies”(RAS/9/068). IAEA resource persons Dr.Istvan Thurai and Dr. Damir Didog were visited SLAEB to conduct lectures. Teaching Hospital Karapitiya and Cancer Institute Maharagama were evaluated to develop as reference hospitals for radiological emergency response in Sri Lanka. About 40 medical doctors were participated in the training course.

4.3.2 Maintenance of Nuclear Disaster Early Warning system:

A new Remote Monitoring Station was installed at the premises of University of Peradeniya and two old Remote Monitoring Stations were replaced by the new systems provided by the supplier Saphymo GmBH, Germany. Periodic calibrations were conducted at eight monitoring stations located at Colombo, Puttlam, Thalai Mannar, Delft, Kankasanthurai, Trincomalee, Galle and Peradeniya.

Fig.4.3. Remote monitoring stations at Thalai Mannar

4.4 Environmental Radiation Monitoring Programmes

Baseline Environmental Radioactivity Measurements in Sri Lanka

Ambient gamma radiation dose rate measurements and soil/grass sample analysis under the above programme was completed. Measurements at 70 locations were carried out within the year 2015 and totally 391 locations have been completed. 284 spectroscopic analysed data and 391 dose rate measurements have been uploaded to the software program which was developed to visualize the data on Sri Lanka Map.

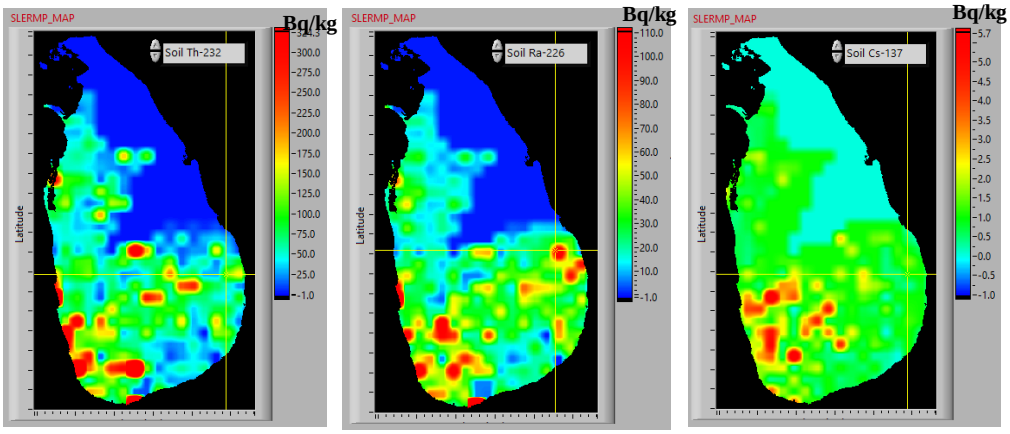


Fig 4.5. Distribution pattern of Thorium Radium and Cesium nuclides in Soil

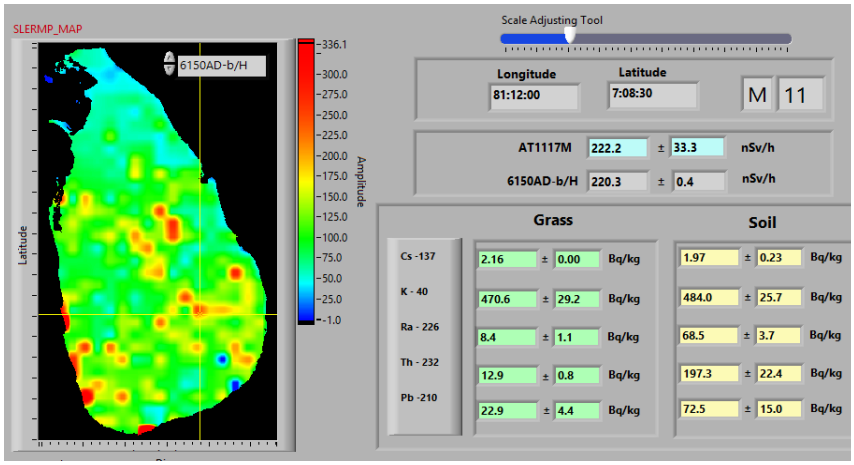


Fig 4.6. Ambient Gamma Dose Rate

5. Nuclear Instrumentation Programme

It is an essential and prerequisite to maintain nuclear instruments in proper operating condition for optimum utilization of nuclear technology. General Scientific Services Division provides following services for maintaining nuclear instruments in the year 2015.

i. Repair of nuclear instruments/reinstallation of software/performance testing.

ii. Software and hardware maintenance of computers and IT, network related services.

iii. Advice and consultation work on the development instrument, activities and services.

6. New development work

Promotion of nuclear science and technology in schools and Universities is a useful tool for future development in the country. Lack of suitable equipment in schools and Universities is a major problem for teaching radiation sciences. In order to overcome this problem Low-cost GM counter system was developed by the GSSD. This GM Counter system can be interfaced with the PC with a user friendly software. This system can be used to conduct number of basic radiation physics practical lessons for School and University students. It is expected to develop another 10 numbers of counting systems in the next year.

7. Personnel Training and awareness programmes

GSSD provides training and awareness for various categories of govt. officers, military personnel, school teachers and children and University students under its knowledge management programme. Following programmes were conducted during 2015 by the GSSD.

i. A three day Nuclear Security and CBRN incident response training course was conducted by the GSSD for the special CBRNE (chemical, Biological, Radiological, Nuclear and Explosive war fare) unit established by Sri Lanka Army. The Training course was held at Sri Lanka Army engineering camp, Maththegoda.
ii. Two one day training programmes were conducted on Nuclear Security for Presidential Security Division of Sri Lanka Police division at Kumbuka, Horana.
iii. One day seminar was conducted for the Post Graduate Medical Students at PGIM Colombo on Radiological and Nuclear Emergency response.
iv. Radiological/ nuclear emergency response and nuclear security training programmes were conducted for the Police In-service training division at Colombo, Kandy and Galle.
v. 02 University students were completed their research activities with nuclear instrumentation at the GSSD laboratory commencing from 2014.

Fig.4.7. Training course at Maththegoda Army

8. Exploring the availability of radioactive mineral in Sri Lanka

Provision of technical support for exploring the availability of natural radio-minerals in Sri Lanka is one of the responsibilities of SLAEB. Under this activity SLAEB initiated the exploration of radio-mineral (Th and U) resource project in collaboration with the Geological Survey and Mining Bureau (GSMB). A Carbone gamma monitoring system donated by IAEA under the TC project SRL/2009 was used to detect radio-minerals. GSSD provided technical support to monitor radiation levels and mapping the locations of Thorium resources in Matale, Pallegama, Dabulla and Elahera areas. In-situ gamma measurements were conducted at high background areas identified at Kaudupellalla, Naula, and Elahera areas.

Fig. 4.8. Exploring radioactive minerals at Matale District

Radon Monitoring in Sri Lanka

Preliminary survey to identify Indoor and Outdoor Radon levels in the country was completed with passive track detectors within 2015. Indoor and Outdoor Radon/Thoron monitoring were completed at Northern part of the Country. Outdoor Radon/ Thoron levels at 48 locations were measured using the CR39 track detector provided by the University of Tokyo and In-door Radon levels at 49 houses were measured with Alpha track detectors provide by IAEA.

Fig 4.9. Indoor & outdoor Radon/Thoron measured locations

9. IAEA Coordinated Research Project (CRP) to Improve Assessment of Initial Alarms from Radiation Detection Instruments.

Take adequate measures to ensure the safety and security of any radioactive source or radioactive waste which are out of regulatory control is a responsibility of the SLAEB. On this context GSSD is providing expert services to Sri Lanka Customs Mega port surveillance unit for detection and identification of radioactive material which are entering to the country without proper authorization. The CRP is a feasibility study of the automatic container inspection and decision making of the Mega port surveillance unit for improvement of the container inspection system. GSSD assisted IAEA to develop the database for the CRP and completed data collecting of 100 shipping containers.

10. ICT Applications:

GSSD provides IT support service for the office administration and scientific activities of the SLAEB**.** Office administration is a set of day-to-day activities that are related to financial planning, record keeping & billing, personnel, physical distribution and logistics, within an organization. Its plays a key role in organizations infrastructure, regardless of the scale. For the scientific implementation programmes, knowledge management and all other communication purposes computer technology and Information Technology is highly utilized by the SLAEB. During the year 2015 following activities were carried out.

i. Existing network facilities of AEB was expanded.
ii. Day-to-day maintenance of maintenance of the website and network.
iii. IT services (operating system installation, troubleshooting of computers hardware and other software to rectify the problems) were done.
iv. Provided IT support to implement office automation system based on Quick Book Account package.

05. National Centre for Non Destructive Testing - 2015

NCNDT launched its activities mainly in 04 directions to achieve its objectives.

1. **Training:** Training courses, workshops, seminars, lectures, industrial training, internship training etc., qualification and personnel certification.
2. **Inspection:** Testing and inspection services.
3. **Research:** Long term and short term research activities related to academic and industrial problems.
4. **Development:** Product/technique development and industrial / infrastructure development.

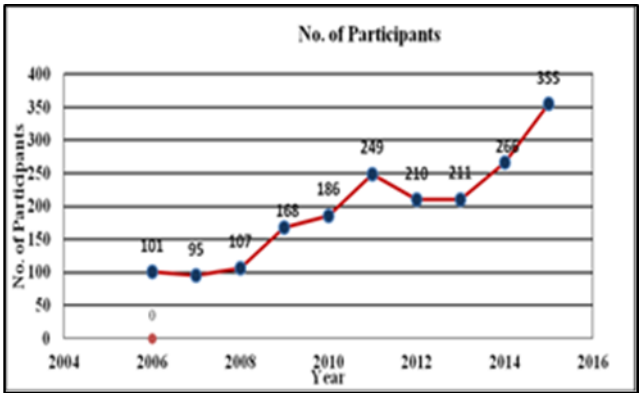
1. Training:

Training includes conducting training courses, workshops, seminars, lectures, industrial training, internship training etc., qualification and personnel certification.

Training Unit of NCNDT annually conducts certification training courses as per IAEA TECDOC 628.
The qualification and certification activities were carried-out by Certification Body for NDT as per ISO 9712 which has been accredited according to ISO 17024 by Sri Lanka Accreditation Body.

In addition, the first ASNT training course was conducted from 03-10-2015 and completed successfully by 10-01-2016. The examination of this training conducted is scheduled to hold during 15-24 February 2016 by the National Certification Body for NDT of Indian Society for NDT. 15 candidates are participating in this examination. Further, a few workshops were conducted on requests of some institutions.

As a result of these activities, NDT manpower in the country increased remarkably during the past few years. In addition, numbers of private and public sector organizations were able to establish NDT laboratories or upgrade existing facilities in their respective organizations. Further it also has created employment opportunities in Sri Lanka and abroad since the certificates issued international recognition.



355 personnel participated in all above activities during 2015. Total income generated under these activities was **Rs 5.1 million** (excluding tax).

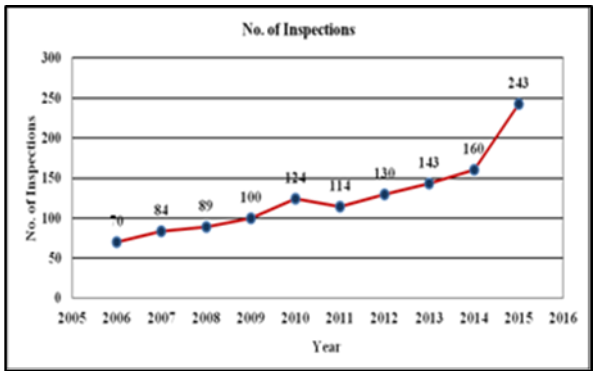
2. Inspection Services:

NCNDT provided NDT inspection services to industry in order to detect defects in machinery and metallic components to ensure industrial safety and to improve industrial productivity.

One of the major inspection we carried out in 2015 is concrete inspection of **07 storey building at Negombo Base Hospital** from 01st to 22nd June, 2015. This inspection included, Ultrasonic pulse velocity test, Reinforcement detection test, Dye test, Core drilling and Vibration monitoring test. Income generated to the NCNDT out of this inspection was Rs. 1.4 million (Excluding Vat).

Another major inspection the NCNDT involved was NDT inspection for Norochcholei Power Plant which started on 03rd July 2015 and ended on 13th November 2015. Income generated out of this inspection was Rs 4.7 million.

Totally NCNDT provided **243** NDT inspection services to Government and Private Sector industries in 2015 and an income of **Rs 15.2 million** (excluding tax) was generated from the same.



Targeted total income for the year 2015 from NCNDT was Rs. 12.0 million. However, NCNDT earned Rs. 25.2 million for 2015 .

3. Research:

This includes long term and short term research activities related to academic and industrial problems.

Under this programme 07 University students attended short term research activities related to their academic works and 70 undergraduates visited the NCNDT laboratory facility.

One of the aspect of R & D work under the NCNDT has been identified as introducing viable and locally developed NDT instrumentation to Sri Lanka.

Proving this concept, Mr. Dinu Sri Madhusanka, undergraduate of Department of Electronics, Faculty of Applied Science, Wayamba University of Sri Lanka, designed an "Industrial Radiography Film Analyzer" under his 06 month research programme in NCNDT. This instrument is the first attempt to fulfill above requirement as an NDT research and development work.

It is a hybrid device of a traditional X-ray Film Viewer and a Densitometer and is a user friendly, low cost and highly customizable device.

With the help of this device, it is expected to reduce the interpretation time in radiography tests and increase the efficiency.

4. Development Work

4.1 Accreditation of CBNDT:
Initiated certification process through the accredited Certification Body for qualification and certification of Non-destructive Testing personnel (CBNDT) conforming to requirements of the ISO 9712, "Non-destructive testing – qualification and certification of personnel" and ISO/IEC 17024, "conformity assessment – General requirements for bodies operating certification of persons".

4.2 Accreditation of Inspection Body of NCNDT:
Accreditation process of Inspection Body of NCNDT as per ISO 17020 was continuing.

4.3 Accreditation of Training Body of NCNDT:
Accreditation process of Training Body of NCNDT was continuing.

4.4 Establishment of a National Centre for NDT (NCNDT):
After initiation of commercial operations of NCNDT on 14th October 2014, the staff of NCNDT dedicated in carrying-out a wide range of services on NDT and related techniques to achieve the progress mentioned in paragraphs 1.0 and 2.0 above.

4.5 IAEA TC Project:
IAEA approved the TC project SRL 1009 for 2016-2019 to strengthen the NDT capability of NCNDT which includes a few expert missions, scientific visits, fellowship trainings and provision of some equipment.

06. Sri Lanka Gamma Centre

Sri Lanka Gamma Centre operated efficiently and smoothly within the year 2015. If operated continuously throughout the year in 365 days. Total source up time was 7780 hrs and the average machine operating efficiency was 89%. The radioactive source was decayed 12.5 % within the year and the source strength at 31st December 2015 was 180 kCi.

Customers

It continued the irradiation of Surgical Gloves which are used in Sri Lankan Government Hospitals produced by Lalan Rubbers (Pvt) Ltd. Further, it processed Surgical Gloves supplied by the Same customer to the overseas market. In addition Surgical Gloves produced by Prime Polymer (Pvt) Ltd were also irradiated. SLGC took steps to diversify the business and catered for the food sector within the year. Accordingly it irradiated Black pepper, Green & Black tea and Karapincha for Overseas Market.

It provided its services to the small scale customers throughout the year. Accordingly Kayak Surgi Pharma obtained the Service of SLGC throughout the year for sterilization of Surgical Aprons and Lanka Bio Film (Pvt) Ltd obtained sterilization services for their culture media.

Discussions and Visits to the SLGC

As a result of promotional activities carried out by the SLGC, following companies had discussions with SLGC to try out the Gamma irradiation technology on their products.

Company Name	Product
Kayak Surgi Pharma Pvt Ltd	Disposable Surgical Aprons
Industrial Clothings Pvt Ltd -Prime Polymers	Surgical Gloves
Dipped Products Pvt Ltd	Latex Sample
Excello Holdings Pvt Ltd	Sample Collection Bottles
Cocopel Lanka Pvt Ltd	Coir Pith Products
Growright Pvt Ltd	Coir Products
CIC Agro Business Pvt Ltd	Dehydrated Carrots
HJS condiments Ltd	Edible Oil
University of Rajarata	Fish fillets
Adamjee Luckmanjee	Black Pepper, Nutmeg, Seasame
G.P.De Silva and Sons	Cinnamon
Nature's Beauty Creations Ltd	Beauty Capsules
Plant Virus indexing Institute	Promegranate invitro culture sample
Millenium Teas Pvt Ltd	Green Tea
Dinoo Plastics Pvt Ltd	Urine Bottles
JB Carbon Activators	Activated Carbon
P.D. Packs and Distributors	Urine Bottles
Adam Exports Pvt Ltd	Spice

Product Trials

Within 2015 following products were tested for the suitability of gamma irradiation technology.

Customer	Product
Wichithra Vacuum Dehydrated Natural Foods	Dehydrated Fruits & Vegetables
Lanka Bio Fertilzers Pvt Ltd	Culture Media
Kayak Surgi Pharma Pvt Ltd	Disposable Surgical Aprons
Dipped Products PLC	Latex sample
CIC Agri Business Pvt Ltd	Dehydrated Carrots
Smithkline Beecham Pvt Ltd	P.P.Bottles
ATG Ceylon Pvt Ltd	Recycled synthetic rubber blended sample
HJS Condiments Ltd	Edible Oil
Adamjee Lukmanjee Pvt Ltd	Black Pepper, Nutmeg, Seasame
G.P.De Silva & Sons Int. Pvt Ltd	Cinnamon
Nature's Beauty Creations Ltd	Beauty Capsules
Millenium Tea Pvt Ltd	Green Tea
Mahaweli Canneries	Dehydrated curry leaves, jack
J.B.Carbon Activators	Activated Carbon

Research and development

SLGC jointly with University of Rajarata initiated a two years research work on "Enhancement of shelf life of fish and fishery products by gamma irradiation". NRC funded for the research and the research activates are going on.

SLGC provided sample irradiation services for following R & D activities

Customer	Product
Fruit Research Development Institute	Fruit Plants, Seeds
Fruit Crops Research and Development Station	Plant Sample
Faculty of Medicine, UoK	Dengue Vector Pupae
Dipped Products PLC	Latex sample
Dept. Physical Science , Rajarata University	Fish Fillets
Agriculture Research Station	Banana in-vitro shoot tip culture
Plant Virus Indexing Centre	Promegranate invitro culture sample

Other:

The Full nuclear security system was installed under the Global Threat Reduction Initiative Programme of USA. Facility is equipped with CCTV cameras and alarm stems and a proper training for the system was carried out by the GTRI for the participants attended by STF, Police, SLGC workers and Radiation Protection Officers of Sri Lanka Atomic Energy Regulatory Council (SLAERC).

The facility was opened for the under graduate & post graduate University students. The educational programme was conducted for 30 final year undergraduate students and 10 post graduate students.

Achievements

Even with the loss of 12.5 % capacity of the radioactive source strength SLGC could earn Rs. 44 million in 2015 by irradiating 3302 Cubic meters of surgical glove and 22 tons of Food products. Sample irradiation by Auxiliary Conveyor System has contributed Rs.369, 554 for the annual income. After establishing the SLGC, the National Health Sector has only spent approximately 1billion for purchasing sterile gloves to the national hospitals in Sri Lanka. Thereby it helped to retain foreign exchange within the country. SLGC was able to reduce its expenses from Rs. 42 Mn in 2014 to Rs. 33 Mn in 2015, with the dedication of the staff and proper management activities.

SLGC maintained the ISO 9001:2008 within the year 2015 and completed the establishment of ISO 13485 standard for medical product sterilization in year 2015.

ZERTIFIKAT · CERTIFICATE · CERTIFICADO · СЕРТИФИКАТ · 認證證書 · 認證證書

CERTIFICATE

No. QS2 16 01 92874 003

Certificate Holder: Sri Lanka Gamma Centre
Biyagama Export Processing Zone
Block A
Walgama
Malwana
SRI LANKA

Certification Mark:

Scope of Certificate: Provision of Gamma Irradiation Service for Domestic and International Customers in Medical Sector as per Pre-determined Customer Requirements.

Standard(s): ISO 13485:2003

The Certification Body of TÜV SÜD America Inc. certifies that the company mentioned above has established and is maintaining a quality management system that meets the requirements of the listed standards.

Report No.: M6744

Effective Date: 2016-01-05
Expiry Date: 2019-01-04

Gary Minks
Vice President, Regulatory Affairs

Page 1 of 1

TÜV SÜD America Inc.
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USA

TÜV®

07. Radiation Processing Section

Objectives of the Radiation Processing Section:

The Radiation Processing Section comes under the Industrial Applications Division of the Sri Lanka Atomic Energy Board (SLAEB) and mainly involved in research and development activities. The objective of the Radiation Processing Section is development of radiation processed materials which are free from hazardous materials to use in Environment, Health, Agriculture and Industrial fields. The section conduct research and development activities in collaboration with other research institutions in above fields.

At present the Radiation Processing Section is conducting their research and development activities under two IAEA/RCA projects.

Project1- IAEA/RCA/RAS 1014 on Radiation Processing for Development of advanced Grafted Materials for Industrial Application and Environmental Preservation:

Introduction:

The main objective of the project is to develop advanced grafted materials for industrial applications and Environmental Preservation in different form of membrane, gel, fiber, hybrid coating etc. Super Water Absorbent (SWA), fertilizer slow releasing agents, heavy metal absorbent and oil absorbent are some of the examples for advanced Grafted Materials.

Super Water Absorbents (SWAs) are used in agricultural applications for maintaining water content in the soil. Farmers in dry zone areas of Sri Lanka face huge difficulties in farming during the dry season due to water scarcity and low water retaining ability. SWA is a cost effective solution for farmers in these areas. Most of the commonly available Super Water Absorbents are made of using synthetic polymers. These products are not bio-degradable and environmental friendly.

The Radiation Processing Section was able to prepare an environment friendly cost effective SWA using radiation grafted natural polymers under the IAEA/RCA project RAS 1014. The project is implemented in collaboration with the Department of Agriculture. SWA products have been developed using cassava starch and the products were tested for water absorbent capacity, water releasing ability and as well as suitability for cultivation areas with sandy soil and drought condition.

Achievements of the Project during the period of year 2015

Studies were carried out to improve the physical properties of SWA such as absorption capacity, absorption rate and water releasing speed. Experiments were conducted to find out an appropriate formula for SWA by adding chemicals to improve the above physical properties. It was able to develop SL-SWA-T-1with maximum absorption capacity in the range of 20000-25000% after 20 days and maximum absorption rate of 7230% within first 7 hours and absorption percentage within 6000-7300 % after 8 hours under the laboratory conditions.

The formula was modified to SL-SWA-T-2 to minimize the water releasing speed of SL-SWA-T-1. The SL-SWA-T-2 depicted a slow water releasing capability compared to the SL-SWA-T-1. It has taken approximately 11 days to release 50% of the absorbed water from the saturated SWA.

Field trials were conducted in Kalpitiya as the area is in dry zone and the type of soil is sandy. The area is one of main vegetable cultivating areas and there is no proper irrigation facility in the area. The cost of water supplying and labour handling in Kalpitiya is high with compare to other areas in Sri Lanka. The most important feature and key factor of SWA for sandy type soil condition is high absorption speed. SL-SWA-T-3 was developed by improving the absorption speed up to 6000% (w/w) within first ten minute. This developed super water absorbent showed double improvement with compare to commercially available similar products.

Solidifying of the developed SWA (SL-SWA-T-3) by absorbing moisture from air was a problem as it was difficult to re powder by hands. The problem was overcome by changing the formula and the new SWA product was coded as SL-SWA-T-4.

Pot experiments were carried out at SLAEB premises for Chili and Tomato plants using developed SWA

with commercially available SWA. Both products showed wilt symptoms on Chili and Tomato 14 days after irrigation.

Developed SWA was issued to Horticultural Research and Development Institute (HORDI), Gannoruwa and Field Crop Research and Development Institute (FCRDI) at Mahailluppallama to carry out Poly tunnel applications with Salad cucumber, Bell Paper and Leafy Vegetables and to carry out field trials respectively.

Poly tunnel application of SWA was carried out to identify the effect of SL-SWA-T-1 on plant growth and yield of bell pepper and tomato. Results revealed that the saved water amount (%) of different treatments were increased with increasing the SWA amount that incorporated to the potting media, indicating water holding capacity of potting media were inversely related to the SWA amount in the media.

Yield data showed that there was a significant difference between different treatments and applying 4 g of SLAEB-SWA-T-1 / kg potting medium gave a highest yield improvement for bell pepper which was 19% improvement. However, there was no significant difference observed among the different treatments.

Figure 6.1: Preparation of SWA and comparative field studies on Bell pepper using SWA developed by the Research group and Gam-Sorb developed by Vietnam

The highest mean tomato yield (g/plant) was given by applying 2 g of SLAEB-SWA-T-1 / 1 Kg potting medium with a yield improvement of 16.5%. Blossom end rot severity was high in SWA treated plots indicating water stress situation in the media. Therefore, further studies are necessary to get conclusive results on quantification of SWA effect on soil water conservation for tomato crops.

Project2 -IAEA/RCA/RAS 8/109 on Radiation Degradation of Natural Polymers (Chitin/Chitosan)

The Radiation Processing Section was able to develop two new agricultural products under the activities of IAEA/RCA project RAS/8/109 "Supporting Radiation Processing of Polymeric Materials for Agricultural Applications and Environmental Remediation''. The project was implemented in collaboration with the Department of Agriculture (DOA) and radiation modified Chitosan was used to develop the products. Chitin which is the second most abundant natural polymer extracted from seafood waste of crabs, shrimps, prawns was used in the study to produce Chitosan. The studies revealed the properties of radiation modified Chitosan as a plant growth promoter and as a fungicide. Two products were developed using these improved properties CHITO POWER-1 and CHITO POWER-2 and introduced as a package "CHITO POWER".

Figure 6.2: CHITO POWER Package and field trials on Cucumber and Gotukola

Field trials were carried out on Tomato, Capsicum, Chillies, Bitter Gourd, leafy vegetables such as Gotukola, Mukunuwenna etc. The results confirmed that the CHITO POWER package has most similar results to the DOA recommended commonly use agro products.

Progress during the year 2015

During the year 2015 initiatives were taken to establish a liquid irradiation line at the Sri Lanka Gamma Centre (SLGC-Commercial Scale Gamma Irradiation facility) for commercial preparation of CHITO POWER. Draft of the design was submitted to the SLAERC to get the approval from regulatory council before installing the setup.

CHITO POWER-02 was tested to control *Phytophthora infestans* root infection of pepper in Sri Lanka (Hathamunagala Estate, Madawala Ulpotha, Matale) and results revealed successful reduction of the disease.

Studies were carried out at Fruit Crops Research and Development Station, Gannoruwa, Peradeniya to find out effectiveness of CHITO POWER -1 on grafting success of Jack Fruit. Lower success rate of grafting of Jack fruit is due to poor growth of the root stock, larger size of the scion wood of the variety, and higher disease incidence. Seed treatment with 20 mgl-1 CHITO POWER-1 solution for half an hour and application of 20 mgl-1 CHITO POWER-1 as a sprayer to growing seedlings within two weeks intervals (3times) showed significant percentage of graft success.

Further development of CHITO POWER has been carried out at present in order to obtain product certification for commercializing.

08. Life Sciences Division (LSD)

LSD is mainly responsible for establishing nuclear and associated analytical facilities at the Sri Lanka Atomic Energy Board (SLAEB) and to promote their applications for socio-economic development of the country. The Division is mainly comprised with three main units, namely, Nuclear Analytical Services Unit, Health and Environment Studies Unit and Nuclear Agriculture Unit. The LSD provides its services to the radiation protection & regulatory programms, import & export sector, industrial sector, research and academic institutes through the utilization of nuclear and associated analytical methodologies.

Currently the LSD does its services through three major Nuclear Analytical Laboratories; Low Level Counting Laboratory for Gamma spectrometry, Low Level Counting Laboratory for alpha spectrometry and X-ray Fluorescence(XRF) analytical laboratory.

Fig.8.1: Ultra background High Pure Germanium Detector system in the Low Level Counting Laboratory

8.1 Analytical Services by Gamma spectrometry

LSD has provided analytical services for import and export sector, local industries and R&D institutes testing more than 7868 samples in year 2015. The samples included milk products from importers, tea, coconut from exporters, some specific items from the industrial sector and R&D samples. The main purpose of testing such materials was to verify whether there was any contamination due to radioactivity in the food samples. The income generated through the analytical service in 2015 was Rs 39.3 million. The number of samples analyzed and income generated during the past years are given in the graph below.

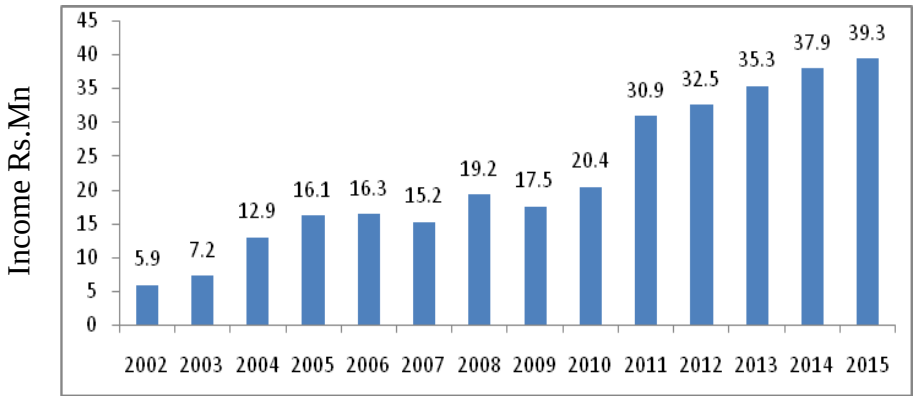

Fig.8.2: Income generated from Nuclear Analytical Services (2002-2015

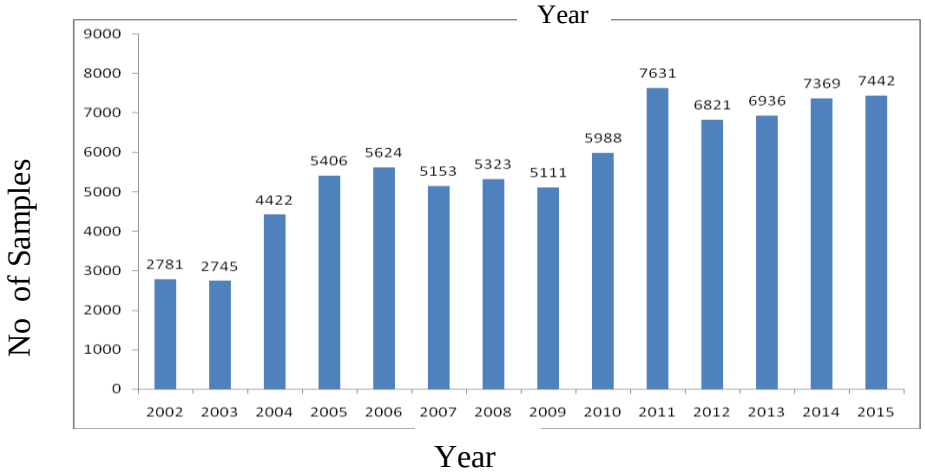

Fig.8.3: Number of samples analyzed in the Nuclear Analytical Services laboratories (2002-2015)

8.2 Research and Development activities using Gamma spectrometry

a) Monitoring of Environmental Radioactivity levels was continued in collaboration with General Scientific Division of the SLAEB. The purpose of this activity was to establish the national baseline levels for radioactivity present in the environment and to prepare a radioactivity map for Sri Lanka. Analysis of samples of soil and plant materials, collected from 400 grids across the island was completed in 95%.

Fig.8.4: Soil samples collected for Radioactivity monitoring program

b) Establishment of Marine and Coastal Environmental Radioactivity Database for Sri Lanka

There was no baseline data available in marine and coastal environment in Sri Lanka until the Fukushima nuclear power plant accident took place in 2011. The necessity of such a database was strongly felt after the above accident. The Fukushima accident triggered the monitoring activity and as a consequence it was possible to establish such a database by the end of 2015. The activity was assisted by Marine Environment Protection authority (MEPA), National Aquatic Resources Development Agency (NARA) and Uni/Ruhuna. The database is to be maintained regularly to monitor the Sri Lankan marine and coastal environment for the safety of general public and the environment. Radioactivity data for seawater, sediment, fish & seaweeds are currently included in the database. In case of an accidental release of any radioactivity into the marine environment, such an increase will be able to detect with respect to the current baseline data and necessary follow-up actions could be planned accordingly. The Figure 8.5 shows the sampling locations included in the database. A comprehensive detail of the database is available on the website (Marine Radioactivity Program under the activities of aeb.gov.lk).

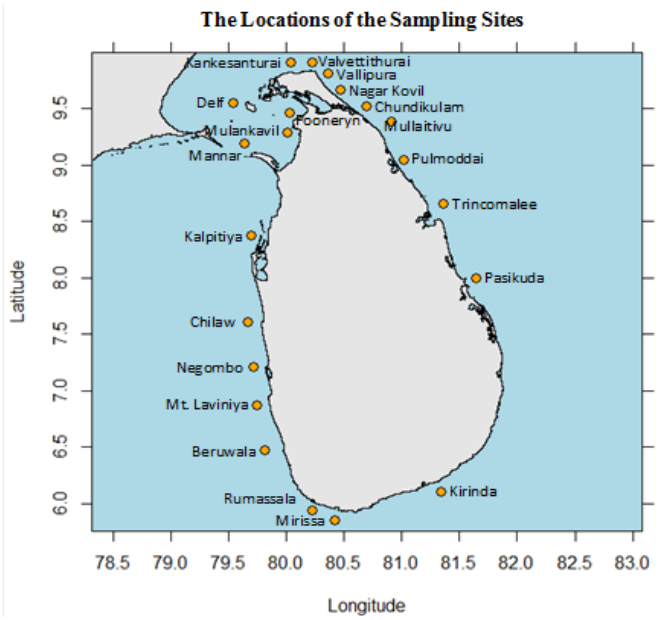

Fig.8.5: Sampling locations of the marine radioactivity monitoring program

c) Establishment of testing method for Iodine-131 radio-iodine (I-131) in hospital waste water

In Sri Lanka, there are few hospitals where radioactive Iodine (I-131) is used for medical diagnostic purposes and cancer treatment. As such, waste water released from such hospitals may contain I-131 in harmful levels in the environment if not regulated. Procedure for the determination of I-131 in waste water was established and an analytical service was provided to regulatory bodies and other concern parties in 2015. The results have been of great use for the regulatory bodies to implement safety standards in the country protecting the general public and the environment from unwarranted exposure to radiation. Apart from that, this service generated an income to the SLAEB through the analytical service.

8.3 R&D Projects

a) IAEA/RAS/7/023; Supporting Sustainable Air Pollution Monitoring Using Nuclear Analytical Technology

Air Pollution Monitoring Program was continued in collaboration with Central Environmental Authority and Department of Meteorology. The sample collection was continued at the fixed sampling location at Meteorological station in Katugastota to monitor air pollution levels in Kandy area. The Asia-Pacific Database was updated and data analysis and interpretation of data was completed.

Preliminary study was carried out to monitor the impacts of indoor and outdoor air pollution levels on cultural heritage objects in Kandy National Museum for a six months period. Four kinds of indoor gases (NO2, NOx, SO2 and O3,) were collected into the diffusion tubes in five different locations at the Museum and samples were analyzed at the laboratory of Gradko International Pvt. in United Kingdom.

b) IAEA/ RAS/5/062.Building Technological Capability for Food Traceability and Food Safety Control Systems Through the Use of Nuclear Analytical Techniques

The capability to certify origin of food or authenticity is of significant economic importance to many stakeholders in developing countries. For example, some food products can be marketed using labels (e.g. GI, Geographic Indication) that are based on standards of identity or composition related to a very specific production area. Producing safe and high quality food is a prerequisite to ensure consumer health and successful domestic and international trade, and is critical to the sustainable development of national agricultural resources. In addition, traceability systems play a key role in assuring food safety across the globe.

The intention of this project was to build the technical capacity so that Sri Lanka will be able to implement traceability systems based on nuclear techniques. The technology was applied to rice and tea as an initial steps and further improvements of the methodology will be done once the planned laboratory facilities are established in Sri Lanka. The International Atomic Energy Agency is assisting in this regard.

c) A research activity was initiated to identify hazardous substances (Elements such as Lead, and Arsenic in particular) in children's toys/items using portable XRF instrument.

Fig.8.6: Sample analysis using portable XRF instrument

8.4 QA/QC Program of LSD

ISO Accredited Laboratory

Low Level Counting (LLC) Lab and X-ray fluorescence lab (XRF) of the SLAEB are the accredited testing laboratories operating in compliance with ISO/IEC 17025:2005 International Standards. This standard are universally recognized as the highest level of quality attainable by a testing laboratory.

The LSD was able to further strengthen of the Quality System through continuous participation in QA/QC programmes conducted locally as well as internationally. The laboratories are participating in internal and external proficiency testing exercises, quality audits, regular assessments conducted by the Sri Lanka Accreditation Board (SLAB) and IAEA. The LSD has demonstrated both the technical competency and management capabilities required to consistently deliver valid test results.

8.5 Training Programmes

a) An expert mission was carried out by an IAEA expert, Dr A. Karydas, in 2015 on the use of Portable XRF instrument in Cultural heritage object analysis. This programme was organized in collaboration with Department of cultural heritage.

b) Provision of Training Opportunities to Graduate and Undergraduate students. LSD Provided training opportunities to post graduate and undergraduate students of universities. Two postgraduate research projects and 05 undergraduate were supported by LSD using nuclear analytical facilities available at present.

8.6 Publications

a) Radioactive caesium evidence for the absence of contamination of Sri Lanka sea water by the Fukushima accident. Pavithra Lakshani Wickramasooriya, Vajira Waduge, Thilaka Nanda Attanayake, Manawadevi Yasatissa Udugala-Ganehenege. Environmental Chemistry Letters Volume 13,(Issue 4,):487-493 · January 2015.

b) Quest to identify geochemical risk factors associated with chronic kidney disease of unknown etiology (CKDu) in an endemic region of Sri Lanka—a multimedia laboratory analysis of biological, food, and environmental samples.

09. Isotope Hydrology Section

Isotope Hydrology Program of the SLAEB assists water sector institutes/organisations on groundwater investigations by providing services and conducting research studies using isotope techniques in hydrology. Isotope Hydrology Section conducted collaborative research studies with International Water Management Institute (WMI), National Water Supply and Drainage Board (NWSDB) and Water Resources Board (WRB) in 2015 in the dry zone (Dehiaththakandiya, Padaviya, Vilgamuwa, Kebithigollewa and Medirigiriya), Manner and Jaffna Peninsula.

The key objective of the studies was to find the safe drinking water sources for the people in the respective areas. The investigations done in the dry zone were concentrated on groundwater dynamics and its possible links with Chronic Kidney Disease with unknown aetiology (CKDu) prevailing in respective zones. The study has recommended making public water supply schemes based on surface water sources such as rivers, tanks, reservoirs etc... Ion chromatography facility was established in the SLAEB in 2015 to support isotope investigations by providing necessary chemical analysis data of water samples. Also the trials were done successfully in 2015 to find the groundwater discharges in to rivers by radon method for the first time in Sri Lanka. It will be applied in the coastal zones to find possible sub marine groundwater discharges. This information is needed for groundwater modeling which supports effective groundwater extraction in future. The detailed description of the work done by the Isotope Hydrology Section is as follows.

- **<u>The projects started in 2015</u>**

  Following projects on groundwater investigations using isotopes and chemical techniques were commenced during 2015

(1) **Isotope and Chemical Investigation of groundwater in Selected Chronic Kidney Disease-unknown (CKDu) Endemic Zones**

(i) Padaviya; started under the contract assigned by International Water Management institute (IWMI),
(ii) Vilgamuwa; started in collaboration with National Water Supply and Drainage Board (NWSDB)
(iii) Kebithigollewa and Medirigiriya; started as an SLAEB research projects.

The objective of the projects was to identify interconnections (if any) between CKDu and groundwater sources. By the end of the year, the groundwater in the above zones could be categorized as "CKDu cased groundwater" and "non CKDu groundwater". The origin and recharge patterns of both types of waters have been identified. The study concluded that the cause for CKDu comes from geological matrices and not from anthropogenic sources. Study recommends making public drinking water supply schemes for the people in the above areas to control the prevalence of CKDu in future.

(2) **Ion chromatography (IC) analysis** was started in the Isotope Hydrology Laboratory to measure major cations and anions in water. Ion concentrations of water samples provide supportive information for the interpretation of isotope data. Water samples from CKDu endemic zones – Padaviya, Dehiaththakandiya and Medirigiriya were analyzed during the year 2015.

(3) **Identification of groundwater discharge in to rivers, streams and coastal zones using Radon technology**

This study was focused on identification of the locations where the ground water discharges into surface water sources. To fulfill the objectives, Radon (^{222}Rn) and field parameters were measured along several sections of the selected stream (Wak Oya-Waga, Avissawella) and dug wells near to the stream. This study was conducted as a trial to identify the potential groundwater discharge locations in the stream. The data gathered will be beneficial to water sector institutions for river management/protection actions. The measuring method was established during the trial study and it will be used in future to find the sub marine groundwater discharges too.

Fig 9.1: Operating RAD7 instrument at the field

- **<u>The projects continued from 2014</u>**

(1) The investigation started in 2012 on groundwater dynamics and water quality deterioration in ***Jaffana peninsula*** using isotopes and chemical tools were continued during 2015. The end user institute of this project is Water Resources Board and the project was operated under the IAEA/RCA project RAS/7/022.

The project was concluded successfully. The study recommends to control the groundwater extraction in selected coastal zones due to saline water intrusion and also the areas for "artificial groundwater recharge" to improve the groundwater sources in Jaffna were identified.

Fig.9.2: Water Sampling in Jaffna

(2) Study on the natural water regimes in the ***Moragahakanda Reservoir*** area to collect the baseline information on the groundwater dynamics in the area was started in Feb-2014 and continued until Feb-2015. The data collected by the end of the project is useful to understand the impact of the reservoir filled in future, to the downstream groundwater bodies. Also the data would be useful to investigate any seepage/leakage problems in future. This project was collaboratively done with Mahaweli Authority of Sri Lanka and Dept of Geology, University of Peradeniya. The study will be extended to Kaluganga project in future.

(3) The groundwater investigation in ***Murukkan basin, Mannar*** was started in collaboration with National Water Supply and Drainage Board (NWSDB) in year 2014. The objective of the study was to understand the mechanism of groundwater recharge and quality deterioration of the groundwater bodies using isotope and chemical tools. This project was successfully completed after collecting samples representing pre and post monsoon periods within one year time. The report will be prepared by the NWSDB.

(4) The establishment of new rainfall collecting stations in Katugastota and Jaffna for **Global Network in Isotope Precipitation (GNIP)** program of International Atomic Energy Agency (IAEA) was done in year 2014 and continued. Under this project, rain water collecting setups were installed in above two locations and rain water was collected monthly in each station. Samples are analyzed both in SLAEB and the IAEA laboratory for stable isotope measurements. Also the rain collecting station in Colombo is being operated since 2008 for the same purpose. The isotope results of rain can be used for local, regional and global climate studies. Also the rain isotope data is useful for future groundwater investigations in Sri Lanka using isotope techniques.

(5) The isotope investigation of groundwaters in a ***CKDu endemic zone; Dehiaththakandiya*** was started under the contract assigned by International Water Management institute (IWMI) in Aug-2014 and continued until March-2015.

(6) The investigation on new water drips in ***Dambulla caves*** was started in year 2014. This project is conducted under the conservation program of historical paintings of Damulla caves by Department of Archeology. Water samples were collected in different suspected locations (ponds on the rocks) in different time intervals as a preliminary activity. The isotope results of samples being evaluated to precede the work for further investigations.

- **The other activities**

  Korea Atomic Energy Research Institute (KAERI) requested analytical facilities for tritium in water. The SLAEB accepted the request in year 2014 and completed the analysis of 100 samples by mid. 2015.

Income generated in 2015

Project	Received for 2015 (Rs.)	Payments made for out-side institutes for sample analysis (Rs.)
Sample analysis for Tritium (Samples from Korea)	872,963.97	92,000.00
CKDu Project -IWMI	1,090,936.00	41,664.96
Vilgamuwa project (NWSDB)	124,099.12	-
Moragahakanda project-Mahaweli Authority	8,280.00	-
Broadlands project -CEB	237,604.40	-
Total	**2,333,883.49**	**133,664.96**

10. Information Section

Awareness Programs conducted during the year 2015

1. Theldenaiya National School - 50 participants at SLAEB dated 2015.04.29

Exhibitions

Secondary School Science Exhibition at Gateway College on 2015.10.02

Progress of YNSS (Youth Nuclear Society of Sri Lanka)

- YNSS coordinated activities of International Youth Nuclear Congress (IYNC) Network in many occasions on behalf of Sri Lanka.

- Conducted the 04th Annual General Meeting of YNSS in Auditorium, SLAEB on 22nd July 2015 & assigned new office bearers.

- Produced sinhala dubbed 40 minutes video documentary to explain the benefits of "Electricity generation using Nuclear Power in Sri Lanka".

- Assisted to the students/ professionals, who came from High Schools, Universities, Defense academies to carry out their research works/assignments on the areas of "Electricity generation using Nuclear Power "

- Provided latest information services through the Web sites regarding the "Electricity generation using Nuclear Power" & peaceful applications of Nuclear science and Technology" as follows.

  YNSS Web site: http://ynssl.wordpress.com/
  YNSS Facebook Group: Youth Nuclear Society of Sri Lanka (YNSS)

  IYNC Web Site: http://www.iync.org

Participation of AEB Officials in Foreign Seminars / Training Programmes / Workshops / Meetings Jan. – Dec. 2015

SSO – Senior Scientific Officer
SO – Scientific Officer
TA – Technical Assistant
SLGC – Sri Lanka Gamma Centre
RTC – Regional Training Course
ICD – International Cooperation Division
GSD – General Scientific Division
RPS – Radiation Processing Section
DD – Deputy Director
NLO – National Liaison Officer
LSD – Life Science Division
ITC – International Training Course
IC – International Conference
IHS – Isotope Hydrology Section
GC – General Conference
CQM – Corporate Quality Manager
CM – Consultancy Meeting
KM – Knowledge Management
RW – Regional Workshop

Se. No.	Name of the Officer	Post	Field of Training Courses / Seminars / Workshops / Meetings	Duration	Country	Sponsoring Institute
1	Mr. K.R.C. De Silva	SO, RPS, Sri Lanka Atomic Energy Board.	IAEA/RCA RTC on Application and up Scaling of Radiation Grafting for Environmental and Industrial Applications. (RAS/1/014).	03.04.2015 17.04.2015	Xianning, China	IAEA
2	Mr. R.M.M.P. Ranaweera	TA, RPS, Sri Lanka Atomic Energy Board.	IAEA/RCA RTC Course on Advanced Characterization Method of Grafted Polymeric Metric. (RAS/1/014).	09.02.2015 13.02.2015	Kuala Lampur, Malysia	IAEA
3	Mr. K.S. Senanayake	SO, NCNDT, Sri Lanka Atomic Energy Board.	IAEA/RCA RTC on DIR and Industrial CT for Trainers. (RAS/1/020).	25.05.2015 05.06.2015	Selangon, Malaysia	IAEA
4	Mr. M.W.S. Perera	SO, NCNDT, Sri Lanka Atomic Energy Board.	IAEA/RCA RTC on DIR and Industrial CT for Trainers. (RAS/1/020).	25.05.2015 05.06.2015	Selangon, Malaysia	IAEA
5	Ms. P.N.G. Rathnaweera,	SO, GSD, Sri Lanka Atomic Energy Board.	International Radiological Assistance Programme Training for Emergency Response - Port / Customs (I - RAPTER - P/C).	11.01.2015 15.01.2015	Bangladesh	USA, Government
6	Ms. J.D.C. Gunasekara	SO, IHS, Sri Lanka Atomic Energy Board.	RTC on Isotope and Geochemical Applications in Flood Risk Mitigation. (RAS/5/069).	23.02.2015 27.02.2015	Bangkok, Thailand	IAEA
7	Mrs. H.M.N.L. Handagiripathira	SSO, LSD, Sri Lanka Atomic Energy Board.	IAEA/RCA Workshop on Regional Aerosol and Pollution Source Fingerprint Database. (RAS/7/023).	08.06.2015 12.06.2015	Daejeon, Korea	IAEA
8	Mrs. H.M.N.L. Handagiripathira	SSO, LSD, Sri Lanka Atomic Energy Board.	IAEA/RCA Final Coordination Meeting. (RAS/7/023).	09.11.2015 13.11.2015	lower Hutt, New Zeeland	IAEA

Participation of AEB Officials in Foreign Seminars / Training Programmes / Workshops / Meetings Jan. – Dec. 2015

9	Mr. V.A Waduge	Director, LSD, Sri Lanka Atomic Energy Board	IAEA/RCA Workshop to Review Implementation of QMS Programmes. (RAS/7/021).	11.05.2015 15.05.2015	Quezon City, Philippines	IAEA
10	Mr. C. Kasige	Director, GSD, Sri Lanka Atomic Energy Board.	37th Regional Meeting of RCA National Representatives (RCA NRM).	16.03.2015 19.03.2015	Islamabad, Pakistan	Governmen t of Sri Lanka
11	Mr. P.D. Mahakumara	Deputy Director, GSD, Sri Lanka Atomic Energy Board.	Consultancy Meeting on the Development of Data Formats and Requirement for the Coordinated Research Project (CRP) on Alarm Assessment.	17.02.2015 19.02.2015	Vienna, Austria	IAEA
12	Mrs. A.M.S.T.N. Attanayake	TA, LSD, Sri Lanka Atomic Energy Board.	RTC the use of FRN, CSSI and Related Isotopic Techniques towards Flood Risk Mitigation and Post - Flood Rehabilitation Efforts in Asia. (RAS/5/069).	04.05.2015 15.05.2015	Beijing, China.	IAEA
13	Mr. S.M. Waduthanthi	SO, NCNDT, Sri Lanka Atomic Energy Board.	IAEA/RCA RTC on Applications of DR and CT to Metal, Non - Metal and Composite Materials. (RAS/1/020).	26.07.2015 30.07.2015	Dhaka, Bangladesh	BAEC
14	Mr. A.A.S.P. Jayawardene	TA, NCNDT, Sri Lanka Atomic Energy Board.	IAEA/RCA RTC on Applications of DR and CT to Metal, Non - Metal and Composite Materials. (RAS/1/020).	26.07.2015 30.07.2015	Dhaka, Bangladesh	BAEC
15	Mr. K.R.C. De Silva	SSO, RPS, Sri Lanka Atomic Energy Board.	RTC of RCA/ UNDP Project on Electron Beam Applications of Degradation of Environmental Pollutants, 11.22.may.2015, Advanced Radiation Technology Institute (ARTI).	11.05.2015 22.05.2015	Jeongup, Korea	IAEA
16	Mr.H.M.N.R. Bandara	DD, ICD, Sri Lanka Atomic Energy Board.	TC Asia and the Pacific NLOS/NLAS Induction Workshop. (RAS/0/073).	01.06.2015 05.06.2015	Vienna, Austria	IAEA
17	Mr. C. Kasige	Director, GSD, Sri Lanka Atomic Energy Board.	TC Asia and the Pacific NLOS/NLAS Induction Workshop. (RAS/0/073).	01.06.2015 05.06.2015	Vienna, Austria	IAEA
18	Ms. W.A. Thiwanka Lakmali	SO, LSD, Sri Lanka Atomic Energy Board.	ALMERA Training Course on Rapid Assessment Method for Environmental Radioactivity.	04.05.2015 15.05.2015	Chicago, USA	Argonne National Laboratory, USA

Participation of AEB Officials in Foreign Seminars / Training Programmes / Workshops / Meetings Jan. – Dec. 2015

19	Mr. P.D. Mhakumura	Deputy Director, GSD, Sri Lanka Atomic Energy Board.	International Training Course on Radiation Detection Techniques: Team Leader Training.	05.05.2015 08.05.2015	Siem Reap, Cambodia	IAEA
20	Mr. E.A.N.V. Edirisinghe	SSO, IHS, Sri Lanka Atomic Energy Board.	International Symposium on Isotope Hydrology: Revisiting Foundations and Exploring Frontiers.	11.05.2015 15.05.2015	Vienna, Austria	Governmen t of Sri Lanka
21	Mr. V.A. Waduge	Director, LSD, Sri Lanka Atomic Energy Board.	Mid - Term Coordinators Meeting. (RAS/5/062).	27.07.2015 31.07.2015	Hanoi, Vietnam	IAEA
22	Mr. H.M.N.R. Bandara	DD, ICD, Sri Lanka Atomic Energy Board.	Workshop on Establishment of Guidelines for Enhancement of the RCA Information Service.	15.06.2015 16.06.2015	Busan, Korea	RCARO in Korea
23	Mr. C. Kasige	Director General, Sri Lanka Atomic Energy Board.	Regional Meeting on Internal Dose Assessment and Bioassay Occupational Intakes of Radio nuclides. (RAS/9/075).	24.08.2015 28.08.2015	China	IAEA
24	Mr. R.M.M.P. Ratnayake	SO, SLGC, Sri Lanka Atomic Energy Board.	Nuclear Technology Seminar 2015 – Basic Radiation Knowledge for School Education Course.	09.11.2015 20.11.2015	Japan	JAEA
25	Mrs. W.M.I. Dissanayake	TA, LSD, Sri Lanka Atomic Energy Board.	Nuclear Technology Seminar 2015 – Basic Radiation Knowledge for School Education Course.	09.11.2015 20.11.2015	Japan	JAEA
26	Mr. A. Jayalath	DD, GSD, Sri Lanka Atomic Energy Board.	Regional Workshop on Developing Hazard Assessment for Radiation Emergencies. (RAS/9/076).	06.10.2015 08.10.2015	Kuala Lampur, Malaysia	IAEA
27	Mr. M.W.S. Perera	SO, NCNDT, Sri Lanka Atomic Energy Board.	Nuclear Safety Seminar FY 2015. **Course of Nuclear Plant Safety (NPS).**	16.11.2015 11.12.2015	Japan	WERC
28	Mr.H.M.N.R. Bandara	DD,ICD, Sri Lanka Atomic Energy Board.	Nuclear Safety Seminar FY 2015. **Course of Nuclear Energy Officials (NEO).**	19.10.2015 06.11.2015	Japan	WERC

Participation of AEB Officials in Foreign Seminars / Training Programmes / Workshops / Meetings Jan. – Dec. 2015

29	Mr. V.A. Waduge	Director, LSD, Sri Lanka Atomic Energy Board.	ALMERA in - Situ Workshop.	02.11.2015 06.11.2015	Spies, Switzerland	IAEA
30	Mrs. A.K. Ratnayake	DD, RPS, Sri Lanka Atomic Energy Board.	IAEA/RCA Final Review Meeting.	30.11.2015 04.12.2015	Bangkok, Thailand	IAEA
31	Mr. E.A.N.V. Edirisinghe	SO, IHS, Sri Lanka Atomic Energy Board.	IAEA/RCA Final Review Meeting. (RAS/7/022).	23.11.2015 27.11.2015	Bali, Indonesia	AIAEA
32	Mr. P. D. Mahakumara,	DD, GSD, Sri Lanka Atomic Energy Board.	Regional Meeting on Review of Initial Radon Measurements and Development of a National Radon Action Plan. (RAS/9/069).	05.10.2015 09.10.2015	Kaula Lampur, Malaysia	IAEA
33	Mr. A. Jayathilake	SSO, NCNDT, Sri Lanka Atomic Energy Board.	2015 RCARO/KAERI Regional Workshop on Radiation Technology and Its Application	12.10.2015 23.10.2015	Daejeon, Republic of Korea	IAEA
34	Mr. Lakshitha Jayawardhane	Chairman, Sri Lanka Atomic Energy Board.	59th Regular Session of the IAEA General Conference.	14.09.2015 18.09.2015	Vienna, Austria	Governmen t of Sri Lanka
35	Mr. C. Kasige	Director General, Sri Lanka Atomic Energy Board.	59th Regular Session of the IAEA General Conference.	14.09.2015 18.09.2015	Vienna, Austria	Governmen t of Sri Lanka
36	Mr. H.M.N.R. Bandara	DD, ICD, Sri Lanka Atomic Energy Board.	59th Regular Session of the IAEA General Conference.	14.09.2015 18.09.2015	Vienna, Austria	Governmen t of Sri Lanka
37	Mrs. A.K. Ratnayake	DD, RPS, Sri Lanka Atomic Energy Board.	RCA- UNDP Project Final Review Meeting Electron Beam Application for Value Addition to Food and Degradation of Environment Pollutants in the Asia Pacific Region. (RCA UNDP).	28.10.2015 29.10.2015	Siem Reap, Cambodia	RCARO
38	Ms. A.A.G. Madurakanthi	SO, SLGC, Sri Lanka Atomic Energy Board.	IAEA/RCA Regional Workshop on Strategy for the Development and Dissemination of Information Martial for Regional Stake holders. (RAS/5/071).	16.11.2015 20.11.2015	Ho Chi Minh, Vietnam	IAEA

Participation of AEB Officials in Foreign Seminars / Training Programmes / Workshops / Meetings Jan. – Dec. 2015

39	Mr. P.D. Mahakumara	DD, GSD, Sri Lanka Atomic Energy Board.	Technical Meeting on the Development of Nuclear Instrumentation for In Situ Environmental Monitoring Programmes.	30.11.2015 04.12.2015	Vienna, Austria	IAEA
40	Mr. V.A. Waduge	Director, LSD, Sri Lanka Atomic Energy Board.	IAEA/RCA Final Project Assessment Meeting. (RAS/7/021).	09.11.2015 13.11.2015	Tokyo, Japan	IAEA
41	Ms. R. R. U. R. Perera	SO, ICD, Sri Lanka Atomic Energy Board.	Workshop on Introduction Nuclear Science and Technology to Secondary School: Result of the Pilot Phase and the Way Forward. (RAS/0/065).	14.12.2015 18.12.2015	Sydney, Lucas Heights, Australia	IAEA
42	Mrs. D.C.K. Dissanayake	SSO, LSD, Sri Lanka Atomic Energy Board.	IAEA/RCA Final Regional Project Review Meeting. (RAS/5/055).	04.11.2015 07.11.2015	Kuala Lampur, Malaysia	IAEA
43	Mr. V.A. Waduge	Director, LSD, Sri Lanka Atomic Energy Board.	IAEA/RCA Final Assessment Meeting With Emphasis on Dissemination to Stakeholders. (RAS/7/024).	26.10.2015 30.10.2015	Denpasar, Indonesia	IAEA
44	Mr. C. Kasige	Director General, Sri Lanka Atomic Energy Board.	Consultant Meeting "Comparison Measurements of Ionization Chamber Calibrations in Radiation Protection Dosimetry for SSDLs".	09.11.2015 13.11.2015	Seibersdrof, Austria.	IAEA
45	Mr. T.M.R. Tennakoon	Director, NCNDT, Sri Lanka Atomic Energy Board.	Visit to India to Discuss and Plan for Conducting of Americal Welding Society Certifications and British Institute of Non Destructive Testing PCN (Personnel Certification in NDT) in Sri Lanka.	11.10.2015 12.10.2015	Chennai, India	Government of Sri Lanka & Lanka High Tech Marine (Pvt) Ltd.
46	Ms. V.S.I. Karunarathna	SO, GSD, Sri Lanka Atomic Energy Board.	Speaker Invitation from Nuclear Power Asia 2016.	20.01.2015 21.01.2015	Jakarta, Indonesia	IAEA
47	Ms. P. N. G. Rathnaweera	SO, GSD, Sri Lanka Atomic Energy Board.	Regional Training Course on Information and Computer security for Facilities that Handle Nuclear and Other Radioactive Materials.	23.11.2015 27.11.2015	Jakarta, Indonesia	IAEA
48	Mr. R. Wickramathilake	SO, NCNDT, SLAEB.	Non Destructive Testing (NDT) Work to Instigate Leakage in one of Sewerage Treatment.	09.11.2015 10.11.2015	Maldives	IAEA

IAEA Expert Assistance 2015

	Project No.	Name and Nationality	Purpose	Institution	Duration
1	RAS/9/068	Dr. Damir Dodig (Croatia)	To Evaluate Hospitals In Sri Lanka as Potential Future Reference Hospitals for Radiological Emergency Medical Response and Training on Medical Responders.	Mr. A. Jayalath, Deputy Director, General Scientific Division, SLAEB.	02.02.2015 06.02.2015
2		Dr. Istvan Turai (Hungary)			
3	RAS/0/070	Mr. Mladen Zeljko(Croatia)	Technical Support for Generation Planning Study in Sri Lanka.	Mr. Damitha Kumarasinghe, Public Utilities Commission of Sri Lanka, 6th Floor, BOC Merchant Tower, St. Michael's Road, Colombo 03.	23.02.2015 27.02.2015
4		Mr. Mykola Kurylchyk (UN) Programme Management Officer, IAEA	To meet the counterparts of the new IAEA TC projects which are to be implemented in 2016-2017 cycle in Sri Lanka and to finalize the implementation plans of the above projects	Mr. H.M.N.R. Bandara, Deputy Director, International Cooperation Division, SLAEB.	09.02.2015 13.02.2015
5	SRL/6/032	Mr. Maurizio Dondi (Italy)	To Enhance Capacity in Nuclear Cardiology.	Dr. (Ms.) D.K.K. Nanayakkara, Consultant / Senior Lecturer, Nuclear Medicine Unit, University of Peradeniya	30.03.2015 03.04.2015
6		Mr. S. Somanesan(Singapore)			
7	SRL6034	Mrs. Nonglak Vilasdechanon (Thailand)	Assigned for QUANUM AUDIT in the Department of Nuclear Medicine, University of Peradeniya	Dr. (Ms.) D.K.K. Nanayakkara, Consultant / Senior Lecturer, Nuclear Medicine Unit, University of Peradeniya	17.08.2015 21.08.2015
8		Ms. Kunthavai Pathmaraj, Australia			
9	SRL6034	Mr. Thomas Neil Pascual, IAEA	QUANUM AUDIT Peradeniya Department of Nuclear Medicine SRL, Per Work plan.	Dr. (Ms.) D.K.K. Nanayakkara, Consultant / Senior Lecturer, Nuclear Medicine Unit, University of Peradeniya	17.08.2015 21.08.2015
10		Mr. S. Somanesan, Singapore.			
11		Mr. SobhanVinjamuri, United Kingdom.			

	Project No.	Name and Nationality	Purpose	Institution	Duration
12	SRL/5/045	Mr. Mirza Mofazzal Islam	National Training Programme of Mutation Breeding at Field Crops Research & Development Institute, Mahailluppallama.	Dr. W.M.A.D.B. Wickramasinghe Additional Director General of Agriculture (Research), Department of Agriculture, Peradeniya.	22.06.2015 26.06.2015
13		Mr. Muhammad Ashraf			
14	RAS/6/075	Dr. Zvi Bar-Sever Israel	Regional Training Course on Principles and Practice of Pediatric Nuclear Medicine and Application of Radionuclide Techniques in Pediatric Nephro-Urology Practice	Dr. (Ms.) D.K.K. Nanayakkara, Consultant / Senior Lecturer, Nuclear Medicine Unit, University of Peradeniya	20.07.2015 24.07.2015
15		Dr. Maria Isabel Roca Spain			
16	RAS/5/055	Mr. Zainudin Bin Othman (Malaysia)	To conduct the IAEA/RCA Regional Training Course (RTC) on Integrated Soil Conservation Practices to Mitigate Soil Erosion and the Role of Nuclear Techniques	Mrs. D.C.K.K. Dissanayake, Senior Scientific Officer, Life Sciences Division, SLAEB.	27.07.2015 31.07.2015
17		Mr. Muhammad Rafiq Sheikh (Pakistan)			
18		Mr. Mohammad Zaman (Austria)			
19	RAS/9/071	Mr. Juan Carlos Benitez Navarro, Austria.	Assigned for Conditioning of Disused Sealed Radioactive Sources in Sri Lanka	Mr. U.W.K.H. de Silva, Senior Scientific Officer, AERC	05.10.2015 09.10.2015
20		Mr. Ali Maleki Farsani (Iran)			
21	RAS/9/010	Ms. Dabbic Bray Gilley (Austria), IAEA.	Conducting National Workshop on Radiation Protection and Optimization of Patient Exposure in Imaging at the National Hospital of Sri Lanka	Dr. A.S. Pallewatte, Consultant Interventional Radiologist, National Hospital of Sri Lanka, Colombo.	07.12.2015 11.12.2015
22		Mr. Anthony Wallace, (Australian)			
23		Mr. Steven Harold King USA.			
24	SRL/6/034	Dr. Louise Potterton (UK)	Project Management & Review	Dr. (Ms.) D.K.K. Nanayakkara, Consultant / Senior Lecturer, Nuclear Medicine Unit, University of Peradeniya	07.12.2015 11.12.2015
25		Dr. Petr Pavlicek (CZRP)			

Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings January - December 2015

Trainings / Workshops / Meetings / Symposia / Conference

The SLAEB receives opportunities for scientific community of the country to attend overseas meetings, conferences, symposia, short term trainings and workshops. Many of these opportunities received from IAEA and some of them received from RCARO/Korea, MEXT/Japan, KOICA/Korea, ICTP/ Italy etc. The SLAEB was able to provide opportunities for 79 number of scientists, engineers and researchers attached to following fields/national institutes in Sri Lanka to expose international environment related to their field.

Institute	No. of Persons
Universities	14
Ceylon Electricity Board	04
Department of Agriculture	12
Atomic Energy Regulatory Council	19
Central Environmental Authority	02
Ministry of Education	01
Ministry of Health	15
Industrial Technology Institute	01
Department of Animal Production & Health	03
Sri Lanka Customs	02
Ministry of Power & Energy	01
Sri Lanka Army	01
State Intelligence Service, Ministry of Defense	01
Department of Irrigation	02
Board Member (University of Peradeniya)	01
Total	**79**

Fellowship Trainings / Scientific Visits

Fellowships awarded through the IAEA Technical cooperation project in order to develop manpower in the field of nuclear technology of the country. Scientific Visits are awarded to senior staff for the purpose of studying and identifying the way of utilization of nuclear technology in other countries in various fields so that they (scientific visitors) can apply such techniques in Sri Lanka in order to develop nuclear technology in the country.

Institute	No. of Persons
Universities	04
Hospitals	03
Department of Agriculture	03
Marine Environmental Protection Authority	01
Geological Survey & Mines Bureau	01
Total	**12**

Other Officials for the Participation IAEA Seminars / Training Programmes / Workshops / Meetings Held in Sri Lanka

The SLAEB hosted three IAEA events (two training courses and one workshop) in Sri Lanka during the year 2015. As these events were held in Sri Lanka, SLAEB was able to offer opportunities for 12 Sri Lankan scientists and researchers to train and exchange ideas with experts and scientists who came from various countries to attend these events.

Institute	No. of Persons
Hospitals	07
Universities	03
Department of Agriculture	02
Total	**12**

FINANACIAL STATEMENTS

2015

ATOMIC ENERGY BOARD

SRI LANKA ATOMIC ENERGY BOARD
STATEMENT OF FINANCIAL POSITION
AS AT DECEMBER 31-2015
(All amounts are in Sri Lankan Rupees)

	Notes	2015	
ASSETS			
Current Assets			
Cash and Cash equivalent	**3**	128,451,736	
Receivables	**4**	16,645,992	
Inventories	**5**	4,728,678	
Prepayments	**6**	2,223,494	
Other Current Assets	**7**	15,366,460	
Differed Expenditure on Cobalt 60	**8**	10,044,000	177,460,360
Non - Current Assets			
Work In Progress	**9**	183,484,766	
R & D On-Going Projects	**10**	352,431	
Property, Plant & Equipment	**11**	544,668,281	
Land & Building	**11.1**	1,048,205,915	
Unusable Items	**12**	55,196	1,776,766,589
Total Assets			**1,954,226,949**
LIABILITIES			
Current Liabilities			
Payable	**13**	70,174,808	
Non Current Liabilities			
Retirement Benefit Obligations	**14**	19,645,011	
Total Liabilities		89,819,820	**89,819,820**
Total Net Assets			**1,864,407,129**
NET ASSETS /EQUITY			
Capital & Reserves			
Government Grant - Capital	**15**	1,965,212,755	
Capital Gain	**16**	5,095,160	
Accumulated Fund	**17**	67,021,695	
Deficit	**18**	(172,922,481)	
Total Net Assets/Equity		1,864,407,129	**1,864,407,129**

The Board of Directors is responsible for the preparation and presentation of theses Financial Statements, the Accounting Policies and notes, integral part of these Financial Statements. Approved and singed for and on behalf of the Board of Directors of Sri Lanka Atomic Energy Board

Chairman	Board Member (1)	Board Member (2)	Actg. Seniro Deputy Director Finance & Administration

SRI LANKA ATOMIC ENERGY BOARD

STATEMENT OF FINANCIAL PERFORMANCE

FOR THE YEAR ENDED 31-DECEMBER -2015

(All amounts are in Sri Lankan Rupees)

	Notes	2015
Revenue	**19**	220,267,952
Other Revenue	**20**	9,652,451
Total Revenue		229,920,403
Wages, Salaries and Employee Benefits	**21**	(90,908,518)
Supplies & Consumable Used	**22**	(26,441,769)
Depreciation & Amortization Expenditure	**23**	(64,633,504)
Impairment of property, plant & equipment	**24**	(4,801,393)
Other Recurrent Expenditure	**25**	(64,075,767)
Finance cost	**26**	(45,225)
Total Expenditure		(250,906,175)
Deficit for the year		**(20,985,772)**

Chairman | Board Member (1) | Board Member (2) | Actg. Seniro Deputy Director Finance & Administration

SRI LANKA ATOMIC ENERGY BOARD

Statement of Changers in Net Assets /Equity

For the year ended December 31- 2015

(All amounts are in Sri Lankan Rupees)

	Capital Grant	Capital Gain	Accumulated Fund	Accumulated Surp/Deficit	Total
Balance at 01-01-2015	**903,676,072**	**1,187,150**	**78,877,912**	**(119,537,507)**	**864,203,627**
Received for the Year	1,109,388,733	3,908,010	4,826,752		1,118,123,495
Adjustments Made -	(47,852,050)	------	(16,682,969)	**(32,399,202)**	(96,934,221)
Surplus/ Deficit for the Year	------	------	------	**(20,985,772)**	(20,985,772)
Balance at 31- December 2015	**1,965,212,755**	**5,095,160**	**67,021,695**	**(172,922,481)**	**1,864,407,129**

Chairman

Board Member (1)

Board Member (2)

Actg. Seniro Deputy Director
Finance & Administration

SRI LANKA ATOMIC ENERGY BOARD

Cash Flow statement for the Year Ended 31st December 2015

(All amounts are in Sri Lankan Rupees)

	2015
CASH FLOW FROM OPERATING ACTIVITIES	
Receipts	
Sales of goods and services	110,483,099
Receipt of Recurrent Grant	49,000,000
Receipts of Loan Interest	209,705
Other	32,611,011
Payments	
Cash paid to Suppliers	(55,961,719)
Cash paid to employees	(92,376,401)
Other Payments	(43,677,714)
Net Cash Flow from Operating Activities	**287,981**
CASH FLOW FROM INVESTING ACTIVITIES	
Acquisition of Plant, Machinery & Equipment	(232,509,866)
Net Cash Flow from Investing Activities	**(232,509,866)**
CASH FLOW FROM FINANCIAL ACTIVITIES	
Receipt of Capital Grant	353,236,000
Recovery of Loans	2,806,193
Payment of Loan	(3,668,507)
Net Cash Flow from Financial Activities	**352,373,686**
Net Increase/Decrease in Cash & Cash equivalent	**120,151,801**
Cash & Cash equivalent at the beginning of the year	**8,299,935**
Cash at Bank	8,298,735
Stamp Stock	1,200
Cash & Cash equivalent at the end of the year	**128,451,736**
Cash at Bank	128,451,729
Stamp Stock	7

Chairman | Board Member (1) | Board Member (2) | Actg. Seniro Deputy Director Finance & Administration

1 Significant Accounting Policies

1.1 General Policies

1.1.1 Reporting Entity

The Atomic Energy Authority (AEA) which was established by Atomic Energy Authority Act No.19 of 1969 has been repealed by the Sri Lanka Atomic Energy Act No.40 of 2014 and established a new institution as Sri Lanka Atomic Energy Board (SLAEB) with effect from 1st January 2015. The new Act was published as a supplementary to the part ii of Gazette of the Democratic Socialist Republic of Sri Lanka on 04th November 2014 for the promotion and encouragement of the use of nuclear science and technology for national development purposes.

As per the Part IV, chapter XIV sub no. 90 of the Act No. 40 of 2014 all the staff belonged to AEA, all movable and immovable property , all contracts and agreements entered into , all accumulate funds and grants, all permits and memorandum of understandings , all the court cases pending and proceeding ,all judgments and orders made favorable or against, all interests, rights, assets, obligations, debts and liabilities which relevant to Sri Lanka Atomic Energy Board have been transferred with effect from 01-01-2015 from Atomic Energy Authority to Sri Lanka Atomic Energy Board.

1.1.2 Basis of Preparation

(a) Statement of Compliance

The Financial statements comprise the Statement of Financial Position, Statement of Financial Performance, and Statement of Changes in net assets/equity, Cash Flow Statement, Statement of comparison figures of budget and the actual amounts and Notes to the Financial Statements. These statements have been prepared in accordance with Sri Lanka Public Sector Accounting Standards (SLIPSAs) and Lanka Accounting Standard (LKAS) for the accrual basis of accounting. The measurement base applied is historical cost adjusted for revaluation of assets
The financial statements have been prepared on a going concern basis and the accounting policies have been applied consistently throughout the period.

(b) Basis of Measurement

The Financial Statements have been prepared on historical basis except where appropriate disclosures are made with regard to the fair value certified by relevant notes.

(c) Functional and Presentation Currency

The functional statements are presented in Sri Lankan Rupees, which is the functional and presentation currency of the SLAEB. All functional information presented in Sri Lankan Rupees has been given to the nearest thousand, unless stated otherwise.

Information about significant areas of estimates, uncertainty, and critical judgments in applying accounting policies that have the most significant effects on the amounts recognized in the financial statements are included in the notes to the financial statements.

(d) Foreign Currency Transactions

All non-monitory items received as donations are reported at the rates prevailing at the time the transactions were occurred.

(e) Events Occurring after the Balance Sheet Date

All material events occurred after the Balance Sheet date has been considered and where appropriate adjustments or disclosures have been made in the financial statements.

(f) Taxes

Nation Building Tax and Income Tax are paid to the Department of Inland Revenue (DIR) in compliance with the prevailing rules.

The estimation of income tax liability includes interpretation of Tax Law. The estimation process by the SLAEB seeking expert advice where appropriate and the payment of the income tax liability is on self-assessment basis.

SLAEB has been registered for VAT and SVAT as a service provider in the DIR and collected VAT is remitted to DIR as per the instructions of the DIR. The computation of VAT is done considering output and input VAT, the allowable input tax component is calculated based on the ratio between internally generated income and the grants received from the Treasury.

1.2 ASSETS AND BASIS OF THEIR VALUATION

Assets classified as current assets and non-current assets in the Statement of Financial Position. Assets which are expected to be realized in or, consumption in the normal operating cycle within one year from the Financial Position dates are considered as current assets. And, assets other than the current assets (non-current assets) are those which the SLAEB intends to hold beyond a period of one year from the date of Statement of Financial Position.

1.2.1 Infrastructure, Plant & Equipment

The Infrastructure, Plant & Equipment are recorded at cost or revaluation less accumulated depreciation. Cost of tangible Property, Plant & Equipment is shown at cost of acquisition or construction together with any incidental expenditure incurred in bringing the asset to its working condition for its intended use. Arrangements have been made to re value the assets transferred from the Atomic Energy Authority (AEA) by an internal committee appointed by the Director General in order to record the fair values.

1.2.2 Depreciation/Amortization

Provision for depreciation is calculated using the straight line method on the cost or revaluation of all Property Plant & Equipment**,** in order to write-off such amount over the estimated useful economic life of such assets

The SLAEB applies the following rates of depreciation per annum for its non-current assets.

Item	Expected life time	Annual depreciation rate
Buildings	Over 50 years	2%
Boundary Wall	Over 10 years	10%
Off. Equipment, Furniture & Fittings	Over 10 years	10%
Electronic Equipment	Over 4 years	25%
Computers, Software & Accessories	Over 3 years	33.33%
Motor Vehicles	Over 4 years	10%
Scientific Equipment	Over 10 years	10%
Library Books	Over 10 years	10%

Lease Hold Assets

The land held under long term lease is amortized over the period. Under a 99 year lease
Agreement with Urban Development Authority (UDA) a land situated at No. 60/460 Baseline Road, Orugodawatta, acquired in 1996.
This transaction has been identified as an operating lease and shown in the financial statement accordingly.

1.2.3 Inventories -Basis of valuation

The cost of each category of inventory is determined on the following basis. Stocks of consumables - At actual cost on first in first out method (FIFO)

1.2.4 Trade & Other Receivables

Trade debtors and other receivables are stated at their cost and amounts estimated to realize, inclusive of provisions for bad & doubtful debts. SLAEB review the status of debtor balances periodically and make a 100% provision for bad debts outstanding over five (5) and written off the debtor balances in the following year with the approval of Board of Management.

1.2.5 Cash & Cash Equivalents

Cash flow statement has been prepared by using the direct method. Cash & Cash equivalents are defined as cash at Bank and stamp stock which are easily convertible.

1.3 LIABILITIES AND PROVISIONS

All known liabilities as at the date of statement of financial position are included in the financial statements and adequate provisions are made for liabilities which are known to exist, but the amount of which cannot be determined accurately.
Obligations payable on demand or within one year of the date of statement of financial position are treated as current liabilities in the statement of financial position. Liabilities payable after one year from the date of statement of financial position are treated as non- current liabilities in the statement of financial position.

1.3.1 Retirement Benefits to Employees

– Defined Benefit Plan

Contribution to EPF & ETF

Obligation for contributions to defined contribution plans are recognized as expenses in the statement of financial performance as incurred.

The Sri Lanka Atomic Energy Board contributes a sum of 15% and 3% of the gross emoluments of employees' to Employee Provident Fund (EPF) and to the Employees' Trust Fund (ETF) respectively.

Contribution to Gratuity provision

Gratuity provision is made according to the Gratuity Act No.12 of 1983. The liability for payment to an employee arises only after the completion of 5 years continued services. The gratuity liability is not externally funded but in order to meet this liability, a provision is carried forward in the Balance sheet, based on half month's salary and cost of living of the last month and of the financial year of all employees who completed one year of service and the total liability is calculated on the basis of half month initial salary + half months cost of living as at 31st December of each employee.

1.3.2 TRADE AND OTHER PAYABLE

Trade and other payable are stated at their cost including VAT.

1.3.3 Capital Commitments and Contingent Liabilities

All material capital commitments and contingent liabilities of the Board are disclosed in the respective notes in the accounts.

1.3.3.1 Provisions

Provisions are recognized as when the Board has a present obligation (Legal or constructive) as a result of a past event, where it is probable that an outflow of resources embodying economic benefits will be required to settled the obligation and a reliable estimate can be made of the amount of the obligation.

1.4 DIFFERED INCOME

1.4.1 Grant and Donations

Grant and Donations are credited to the statement of financial performance over the periods necessary to match them with related cost, which they are intended to be compensated in a systematic basis. Grants related to Property Plant & Equipment, including non-monitory grants at fair value is differed in the statement of financial position and credited to the statement of financial performance over the useful life of the related assets and their remaining lease period as per the internally accepted policy.

1.4.2 Government Grant

Government grant for recurrent & capital has been identified separately. Recurrent grant is the major income source & credited to the income & and Expenditure statement while grant for capital expenditure is taken to accumulated fund with due adjustment for depreciation component of fixed assets Capital grant received from other sources are shown as differed income under non-current liability.

1.5 STATEMENT OF FINANCIAL PERFORMANCE

Accounts are prepared in accrual basis.

1.5.1 Revenue and Expenditure Recognition

Major source of revenue is internally generated income from the services.

1.5.1.1 Revenue

Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Board. Revenue received from operating activities was comprised with net income of Irradiator Service, Radiation Processing services, NDT Inspections & Training, Nuclear Instrumentation & Calibrations, Interest on Loans, Non Refundable deposits, Sundry income, disposal income, Gain on disposal of assets based on accrual concept & excluding VAT.

1.5.1.2 Expenditure

Expenses are recognized in the statement of financial performance on the basis of a direct association between the costs incurred and the earning of the specific items of income where appropriate. All operational expenditure incurred by the Board are accounting on accrual basis.

1.5.2 Research & Development

Costing the research projects has been considered direct material & other expenses and charged as recurrent expenditure.

2. CORPORATE INFORMATION

Sri Lanka Atomic Energy Board (SLAEB) was established by the Sri Lanka Atomic Energy Act No.40 of 2014 with effect from 1st January 2015. The registered office of Sri Lanka Atomic Energy Board is located at No. 60/460, Baseline Road, Orugodawatta, Wellampitiya.

Note - 03	**Current Assets**		
	Cash at Bank		
	Ac no:071-1-001-1-3320739		128,451,729
	Stamp Stock		7
		Balance at the end of the year	**128,451,736**
Note - 04	**Receivables**		**16,645,992**
	Trade & Other Receivables		
4.1	**Debtors**		
4.1.1	Trade Debtors		6,010,520
4.1.2	Non Trade Debtors		4,610,165
4.1.3	Provision for Doubtful Debts		(49,292)
		Net Trade Debtors Amount as at 31-12-2015	**10,571,393**
4.2	Staff & Non Trade Receivables		
4.2.1	Staff Debtors		9,608
4.2.2	Other debtors		294,915
		Balance at the end of the year	**304,523**
4.3	**Advances & Loans**		
4.3.1	Motor Cycle Loan		14,999
4.3.2	Cycle Loan		563
4.3.3	Festival Advance		31,200
4.3.4	Distress Loan		5,503,650
4.3.5	EPF Arrear		514
		Balance at the end of the year	**5,550,926**
4.4	**Refundable Deposits (Receivable)**		219,150
Note - 05	**Inventories**		
	Chemical Stock		487,868
	Office & Laboratory Consumable & Vehicle Spare Stock		1,386,697
	IAEA Closing stocks (Donation))		655,140
	Closing stock -Radiation Processing Section		315,789
	Closing Stock M G I F		460,062
	Closing Stock NCNDT		1,423,121
		Balance at the end of the year	**4,728,678**
Note - 06	**Prepayments**		
	Cooling Services (PVT) Ltd.		50,488
	Sri Lanka Insurance Corporation		1,663,525
	Metropolitan Communication Ltd		8,430
	Motor Traffic Commissioner		6,499
	Johan Keels office Automation		43,831
	Metropolitan Office (Pvt) Ltd		8,795
	S.L.A.B		261,713
	A. Jack Office Solution		3,325
	Pradeshiya Saba- Kelaniya		50
	National Insurance Trust Fund		55,526
	Soar Technology		80,203
	H& L Electricles		26,633
	Business Machines Co		14,478
		Balance at the end of the year	**2,223,494**

Note - 07		**Other Current Assets**	**15,366,460**
	7.1	With holding Tax Receivable	2,785
	7.2	Income Tax Advance	17,158
	7.3	VAT Receivable	477,176
	7.4	I.A.E.A Receivable	3,591,200
	7.5	Advance payment for scientific Equipment	9,184,390
	7.6	Receivable from AERC	128,970
	7.8	Director General of Customs	1,776,350
	7.9	Economic Services Charges	87,422
	7.10	**Purchasing Advance**	
		Balance at the beginning of the year	729,360
		Settlements	(727,070)
		Purchasing Advance for the year	98,718
		Balance at the end of the year	**101,009**
Note -08		Differed Expenditure on Cobalt 60	**10,044,000**
Note - 09		**Work-In-Progress**	
		Accounting Software Package	820,000
		Goods in Transit	300,916
		A E B- Malabe Project	1,363,850
		Land Malabe	181,000,000
		Balance at the end of the year	**183,484,766**
Note -10		**Research & Development On Going Projects**	
		Radiation process Natural polim. for Agri. (R A S/8/1090)	352,431
		Balance at the end of the year	**352,431**
Note -11		**Property, Plant & Equipment**	
		Property Plant & Equipment	544,668,281
Note -11.1		Land & Building	1,048,205,915
		Balance at the end of the year	**1,592,874,197**
Note- 12		**Unusable Items**	
		Unusable Items	55,196
		Unusable laboratory chemicals	397,758
		Pro. For unusable laboratory chemicals	-397,758
			55,196
Note- 13		**Trade Payable**	**70,174,808**
	13.1	**Creditors & Accruals**	
		Creditors & Accruals as at 10-01-2015	34,954,190
		Settlement during the year	(38,770,829)
		Provision for the year	65,733,311
		Balance at the end of the year	61,916,672
	13.1.1	Vat Payable from Debtors	782,695
		SLRDC Retention	1,477,988
			2,260,683

		2015
13.1.2	Over Income	54,471
13.1.3	Advance received for CKD project	816,792
13.1.4	Advance received for I A E A project No 18066	2,565,406
13.1.5	E PF control	188,429
13.1.6	Advance received for C K D U Project	45,750
13.1.7	E T F control	21,947
13.1.8	PAYE Payable	824
13.1.9	Retention -Secura Tech PVT Ltd.	500,000
13.1.10	Income Tax	291,541
13.1.11	Advance Income from LF	26,419
13.1.12	Advance Income from RP	4,428
13.1.13	Advance Income from FT	1,270
13.1.14	Sundry Creditors	19,838
13.2	Payable -AERC	1,198,533
13.3	Refundable deposit Payable	261,805
		261,805

Note -14 Retirement Benefit Obligations

Balance at the beginning of the year	20,042,030
Cash Paid	(2,432,397)
Add : Provision for the year	2,035,378
Balance at the end of the year	**19,645,011**

Note - 15 Capital & Reserves

Transfer from AEA as at 01-01-2015	646,237,921
Transfer from AEA -(as Reserves)-as at 01-01-2015	257,438,151
Capital Grant Received for the year	359,031,000
Capital Grant Received from MORT -04-08-2015	748,447,239
Grant Received for Clearing of Donation	1,910,494
Adjustments made for the year	(47,852,050)
Balance at the end of the year	**1,965,212,755**

Note - 16 Capital Gain

Transfer from AEA as at 01-01-2015	1,187,150
Capital Gain Received for the year	3,908,010
Balance at the end of the year	**5,095,160**

Note -17 Accumulated Fund

Transfer from AEA as at 01-01-2015	78,877,912
Donations Received for the Year	4,826,752
Adjustments made for the year	(16,682,969)
Balance at the end of the year	**67,021,695**

Note -18 Deficit

Transfer from AEA as at 01-01-2015	(119,537,507)
Adjustments made for the year	(32,399,202)
Surplus/Deficit for the year	(20,985,772)
Balance at the end of the year	**(172,922,481)**

Note 19 Revenue

Government Grant- Recurrent		49,000,000
Differed Revenue		64,535,019
Food Testing		38,718,632
Food Testing (HPGE Method)		232,170
NDT Inspection Services		14,590,863
Nuclear Analytical		217,455
General Scientific Services		1,332,654
NDT Training Courses		5,064,892
Amendment Charges		16,350
stable Isotope Analysis		2,080,563
N D T Qualification/certification		69,750
Income from SLGC		44,267,647
Radiation Processing Services		17,857
Water Board Project		124,099
	Balance at the end of the year	**220,267,952**

Note 20 Other Revenue

Interest on Loan		209,705
Miscellaneous Income		78,199
Rental Income		654,000
Polipto Electricity & Water		75,767
Other Income -NCNDT		4,920,032
IAEA Workshop		3,714,749
	Balance at the end of the year	**9,652,451**

Note 21 Wages, Salaries and Employee Benefits

Salaries		22,504,286
NCNDT Salary and Employee Benefits		19,002,834
Employees Provident Fund		4,468,999
SLGC Salaries and Employee Benefits		14,623,343
Employees Trust Fund		893,800
Additional Allowances		5,205,583
Interim Allowances		34,308
Over Time& Holiday payments		863,345
Gratuity- for the Year		2,127,010
Encasement of Medical leave		1,780,872
Incentive		1,950,000
Cost of living		7,312,416
Payment for unconsumed Annual Leave		97,541
Trainee Allowance		772,000
Fuel Allowance		611,444
Research Allowance		193,416
Other Allowance		8,179,901
Transport Allowance		287,419
	Balance at the end of the year	**90,908,518**

Note 22	**Supplies & Consumable Used**		
	Fuel & lubricants		891,310
	Office Consumables & Stationary		1,976,276
	Laboratory Consumables		1,256,424
	Laboratory Consumable Donation		963,635
	Uniforms		364,536
	Supplies & Consumable Exp. At NCNDT		2,015,568
	Supplies & Consumable Exp. At SLGC		18,974,020
		Balance at the end of the year	**26,441,769**
Note 23	**Depreciation /Amortization of Asset**		
	Amortization (Lease Rent)		98,485
	Depreciation on Acquisition of Assets		47,852,050
	Depreciation on IAEA Donations		16,682,969
		Balance at the end of the year	**64,633,504**
Note 24	**Impairment of property, plant & equipment**		
	Maintenance of Office Building		1,915,452
	Service & Repairs of Equipment		1,312,226
	Maintenance of Motor vehicle		1,573,714
		Balance at the end of the year	**4,801,393**
Note 25	**Other Recurrent Expenditure**		
	Remuneration for Authority Memb.		394,600
	Training Programme ,Seminars		422,965
	Staff Local Training Programme		619,813
	I A E A Work Shop		3,749,916
	Exhibition		1,720
	Incidental Expenses for Scientist		358,839
	Entertainment		139,742
	Advertisement & publicity		475,050
	Subscript. for Newspapers		40,050
	Printing & Publications		400,660
	Welfare Services		471,689
	Audit Fees		200,000
	Miscellaneous Expenses		186,229
	Payment for Life Science Division		837,345
	Payment for General Scientific Division		16,127
	Payment for Radiation Processing Division		87,222
	Water Board Project		1,625
	Stable Isotope Analysis of Water sample		99,137
	Research & Development Projects		975,161
	Stamp Duty		8,125
	Nation Building Tax		1,973,637
	Doubtful Debtors		74,464
	S L G C Operating Expenses		15,372,317
	NCNDT Operating Expenses		16,592,977
	Loss on disposal of unusable assets		352,330
	Office Traveling		133,418
	RCA Meeting		293,246
	IAEA General Conference		1,851,320
	Traveling for Authority Members		137,500
			46,267,222

	Cont.....	46,267,222
	Clearing charges	73,662
	Electricity	4,658,947
	Water	270,851
	Telephone	725,299
	Telex , Fax & E-Mail	388,595
	Postage	351,620
	Security	3,003,780
	Insurance	5,796,172
	Transportation	1,292,204
	Rates	324,000
	Legal Expenses	39,620
	Ground Rent	102
	Y N S S Project	8,910
	Radioactive Monitoring Programme	249,008
	Developing National Capability to Respond radiological Emergencies	121,302
	MIPA Project	107,013
	Air Pollution Project	23,659
	Improving Soil Fertility Land Productivity	27,920
	Isotope Hydrology Divisional	53,843
	Broadlan Hydropower Project	495
	Income Tax	291,541
	Balance at the end of the year	**64,075,767**

Note 26 Finance cost

	Bank Charges	45,225
	Balance at the end of the year	**45,225**

Property Plant & Equipment – Note No 11

Tangible Assets Note **Lease Hold Assets Note- 11.1** **Cost**	**Life of the Asset**	**1/1/2015**	**Re-stated Opening Bal.**	**Additions/ Transfers in**	**Disposal**	**Balance as at31.12.2015**
Land	99	7,944,442	7,944,442			**7,944,442**
		7,944,442	**7,944,442**	**-**	**-**	**7,944,442**
Owned Assets						
Land & Building						
NDTC-Land		90,884,994	90,884,994			**90,884,994**
Office & Lab Building-HO	50	97,279,137	97,279,137			**97,279,137**
Office & Lab Building - NCNDT				476,229,036		**476,229,036**
Office & Lab Building-SLGC				413,276,303		**413,276,303**
		188,164,131	**188,164,131**	**889,505,339**	**-**	**1,077,669,469**
Property, Plant & Equ.						
SLGC Retaining wall				20,236,579		**20,236,579**
Boundary Wall	10	2,876,476	2,876,476			**2,876,476**
Scientific Equipment	10	210,379,196	210,379,196	48,563,198	2,204,111	**256,738,284**
Scientific Equipment donation	10	134,091,053	134,091,053	181,823,315	1,774,426	**314,139,942**
Cobalt 60				161,988,502		**161,988,502**
Office Equipt/ Furn & Fitti.	10	36,792,248	36,792,248	20,038,635	35,841	**56,795,043**
Other Equipment	10	1,312,672	1,312,672		7,260	**1,305,412**
Motor Vehicle	4	25,465,217	25,465,217	7,195,000		**32,660,217**
Radiation facility	10	214,317	214,317			**214,317**
Library Books	10	1,870,262	1,870,262	4,477		**1,874,738**
Computer items & software package	3	16,772,621	16,772,621	2,076,219	787,671	**18,061,170**
Electronic Items	4	13,408,307	13,408,307	1,023,882	456,347	**13,975,841**
Security Hut & fence-	10	1,008,760	1,008,760			**1,008,760**
Access Bridge	10	2,864,394	2,864,394			**2,864,394**
NDT Fence	5	490,800	490,800		490,800	
NDT Boundary Wall	10	2,583,023	2,583,023			**2,583,023**
TOTAL ASSETS VALUE Rs.		**450,129,346**	**450,129,346**	**442,949,807**	**5,756,456**	**887,322,698**

DEPRICIATION		**As At**	**Re-stated**	**Additions/**		**As At**	**W D V as at**
Amortization/Depreciation		**1/1/2015**	**Opening Bal.**	**Transfers in**	**Disposal**	**31.12.15**	**31.12.2015**
Land				98,485		98,485	7,845,957
				98,485	-	98,485	7,845,957
Land & Building							
NDTC-Land		90,884,994					**90,884,994**
Office Building	2	22,487,846	22,487,846	1,945,583		24,433,429	**72,845,708**
Office & Lab Building - NCNDT				9,524,581		9,524,581	**466,704,455**
Office & Lab Building-SLGC				3,351,501		3,351,501	**409,924,802**
		113,372,840	**22,487,846**	**1,945,583**		**37,309,511**	**1,040,359,958**
Property, Plant & Equ.							
SLGC Retaining wall				820,552		820,552	19,416,027
Boundary Wall	10	2,876,475	2,876,475			2,876,475	1
Scientific Equipment	10	103,281,945	103,281,945	18,492,593	532746	121,241,793	135,496,491
Scientific Equipment donation	10	83,781,523	83,781,523	16,682,969	513,706	99,950,787	214,189,155
Cobalt 60 decay				45,100,800		45,100,800	116,887,701
Office Equip/ Furn & Fitti.	10	10,859,169	10,859,169	4,668,104	28,223	15,499,050	41,295,992
Other Equipment	10	1,308,465	1,308,465	1,989	7,258	1,303,196	2,216
Motor Vehicle	25	20,308,983	20,308,983	4,955,810		25,264,793	7,395,424
Radiation facility	10	214,315	214,315			214,315	2
Library Books	10	819,811	819,811	186,205		1,006,016	868,721
Computer items	33	14,066,064	14,066,064	1,734,275	787,663	15,012,677	3,048,493
Electronic Items	25	9,741,107	9,741,107	1,525,239	455,970	10,810,376	3,165,466
Security Hut	10	444,598	444,598	100,876		545,474	463,286
Access Bridge	10	1,605,628	1,605,628	286,439		1,892,067	972,327
NDT Fence	20	180,050	180,050		180,050	-	-
NDT Boundary Wall	10	857,744	857,744	258,302		1,116,046	1,466,977
TOTAL DEPRICIATION Rs.		**250,345,877**	**250,345,877**	**94,814,153**	**2,505,616**	**342,654,417**	**544,668,281**
Intangible Assets							
Accounting Software Package		820,000					
NET BOOK VALUES Rs.	**Note**	**2015**					
Land & Building	**11.1**	1,040,359,958					
Lease Hold Properties		7,845,957					
Infrastructure, Plant & Equ.	**11**	544,668,281					
		1,592,874,197					

Disclosures to Accounts

1. Revaluation of Property Plant & Equipment

Process of revaluation had been initiated in the year 2012 in order to comply with Accounting Standards. A schedule of Scientific Equipment which are serviceable but the book value become zero were sent to the Department of Valuation.

Department of Valuation continuously attended to this process and requested some additional information from the Atomic Energy Authority (AEA- Predecessor of the Sri Lanka Atomic Energy Board) in order to finalize this exercise.

Due to the delay in the revaluation process of the Department of Valuation, Sri Lanka Atomic Energy Board (SLAEB) has decided to revalue the all furniture, office equipment and scientific equipment with the help of internal committee appointed by the Director General.
Relevant committees have been appointed and the works are in progress.

2. Relocation of the Sri Lanka Atomic Energy Board

Road Development Authority (RDA) had informed that the existing AEA land will be acquired by them for the purpose of constructing new bridge across the Kelani River to connect the Colombo – Katunayake express way (CKE).

A land belongs to Urban Development Authority (UDA), situated at I.T. Park Malabe, has been identified as the relocation site and Rs.50 mn. had been paid to the Urban Development Authority (UDA) during the year 2014 and the balance amount of Rs.131 was paid in 2015.

The relocation project is implemented under two phases. Japanese International Cooperation Agency (JICA) provides Rs.369 mn. for the phase 1 through the RDA and Government of Sri Lanka (GOSL) provide necessary funds for the phase 2.Approval of the Department of National Planning to spend Rs.743mn.for the phase 2 had been received during the year 2014.

Building Constructions under phase 01 were commenced in April 2015. Design consultants for phase 02 were appointed in November 2014 and they have completed design works and bidding documents of the phase 02.
Central Environmental Authority (CEA) had informed on 15.06.2015 that the commencement of construction activities of any prescribed project without an approval obtained from the CEA through an Environmental Impact Assessment (EIA)/ Initial Environmental Examination (IEE) is a violation of the provisions of National Environment Act and the regulations published under the same. They have informed to stop the construction activities accordingly.

However, the CEA had previously informed us that the above project is not a prescribed project requiring an EIA to be done in terms of the National Environmental Act as per the letter dated 21. August 2013.

SLAEB appointed a consultant for IEE and commenced the examination in July 2015.During the process of IEE the CEA granted permission to relocate the SLAEB at IT Park, Malabe without the source storage. Then the SLAEB decided to remain the source storage facility at the present location.

Construction activities had not been restarted until the end of 2015.

3. Unsettled commitments at the end of the year 2015

Cash balance as at 31.12.2015 represent the following capital commitments.

Item	Reference	Amount Rs.
Procurement of Cobalt 60 to SLGC		125,000,000
Payments for the Liquid Scintillation Counter	P.O 3281	2,667,000
Payments for the Sofa Set	P.O 3613	134,000

4. Outsourcing of SLAEB Properties

The Board of Directors of the AEA (AEA- Predecessor of the Sri Lanka Atomic Energy Board) has decided to rent idling space (545sft.) for the use by the Polipto Lanka (PVT) Ltd under renewable annual contract agreement. Polipto Lanka (Pvt.) Ltd. is a Company gazette under the Ministry of Power & Energy and operated under the Ministry of Petroleum and Petroleum Resources Development during the year 2015.

5. Pending Court Cases

Case No	Respondents	Current status
Supreme Court Case No- FR 662/2010	This case was filled by an employee of AEA, against the salary anomalies of the Scientific Officers as a result of re-categorizing employees under MSD Circular No 30.	The next date of the case is 24th March 2016; it is to be taken up for hearing.

6. Transfer of the ownership of the Assets belonging to the Multipurpose Gamma Irradiator (MGIF) Project from the Ministry of Technology & Research to the AEA

Land allocated to Sri Lanka Gamma Centre is presently belonging to the Ministry of Technology & Research (MOTR) under lease agreement with the Board of Investments of Sri Lanka (BOI). MGIF final steering committee meeting held on 20.November 2014 has decided to hand over this land to the SLAEB under sub lease agreement. Consent of the BOI has also been received for the above transfer.

All the inventories belonging to the MGIF project have been handed over to the SLAEB through the line Ministry in August 2015.

6.1 Accounting Treatment for Cobalt 60 Source of the MGIF

Value of the cobalt 60 source (250 Kci) was Rs.161,988,502 as per the certified document issued by the Ministry of Technology & Research (MOTR) when the transfer of assets belonging to MGIF Project was taken place.

Radioactivity strength of the Cobalt -60 source decreases with the time. This is called as the decay of the radioactivity source.

It had been identified the value of decay cost before starting the commercial activities was Rs.10,044,000. This amount has been accounted under differed expenses. SLAEB will take action to write off this value against future earnings.

7. IAEA Donations under Technical Cooperation

Sri Lanka Atomic Energy Board (SLAEB) functions as the focal point of Sri Lanka for the coordination and implementation of the Technical Cooperation Programmes of International Atomic Energy Agency (IAEA) in order to develop nuclear technology in the country.

The assets and consumables donated to SLAEB under various IAEA projects have been accounted in SLAEB books of accounts.

The following details are relevant to the transactions during the year 2015 for SLAEB technical cooperation programmes.

	Project No.	Project Description	Value of Equipment & Consumables Received in SLRS in 2015
	SLR/1/008	Providing Technical support for smooth, safe and sustainable operation of MGIF Project	1,077,567
	SLR/7/005	Establishing a National Centre for Marine Pollution Control	2,453,272
	SLR/5/045	Establishing a National Centre for Nuclear Agriculture.	1,170,240
	SLR/9/009	Developing National Capability to Respond to Radiological Emergencies.	544,392
	RAS/7/023	Supporting Sustainable Air Pollution Monitoring Using Nuclear Analytical Technology	751,521
		Total	**5,996,992**

In addition to above, SLAEB had conducted several research projects using IAEA assistance and trained SLAEB employees as well as officers of other national institutes in various fields. SLAEB officials had also participated in several meetings conducted in several countries under the above projects.
Sri Lankan Government has made the following contributions as the National Participation Cost (NPC) on behalf of receiving the above assistance from IAEA.

1. Regular Budget contribution SRLSRs. 15 million paid by the Ministry of Power & Renewable Energy in 2015.

2. Assessed Programme Cost (APC) and National Participation Cost (NPC) SLRS. 6 million paid from the External Resources Department (ERD) of the General Treasury.

7.1.. Purchase of Scientific Equipment through IAEA procurement system

The International Atomic Energy Agency (IAEA) has a mechanism to assist its member States to procure scientific and consumable items for Nuclear Technology related projects and activities including radiation protection and personal monitoring services.

Approval from the Cabinet of Ministers had been granted Atomic Energy Authority to follow this procedure as per Cabinet Paper No.12/0881/516/028/TBR dated 07.07.2012 in this regard.

Details of fund transfers to the IAEA and progress of procurements up to end of 2014 are given below.

	Description	Equipment,	Values in Rs.
	Balance as at 31.12.2014	Hand held X-Ray Fluore.Spectro meter –	9,607,603
	Value of item received during the year 2015	Hand held X-Ray Fluore. Spectrometer –	(6,016,403)
	Balance amount receivable from IAEA		3,591,200
	Funds remitted to IAEA in 2015 for Procurement.	Isotope Ratio Mass Spectrometer	9,184,309

The amount contributed by the AEA is considered as the voluntary contribution is subject to charge 3% for the IAEA programme support and administrative services, which will be charged as disbursement, occur.

8. Arrears of the EPF and ETF of the AEA (AEA- Predecessor of the Sri Lanka Atomic Energy Board) **staff for the period 1981-2014**

AEA policy on employer's contribution of the EPF was changed from 12% to 15% with effect from 26-05-2011 at the Board Meeting held on 07-12-2012. Effective date was the date which the Committee on Public Enterprises (COPE) direction was received and considering the fund position for the arrears payment.

Subsequently, the affected parity (AEA employees) has made a request to the management that they are entitle to receive the arrears with effect from 1981. This matter was discussed with the Secretary, Ministry of Power & Energy and instructions were received to calculate such arrears also and submit to the treasury for necessary action.

Approximate fund requirement for EPF & ETF excluding surcharges are as follows.

Values in Rs.mn.

Description	Sub Total	Grand Total
EPF payable from 1981 to May 2011 for change of %	5.9	
EPF arrears from 2007 to May 2011 for cost of living allowance	3.7	
EPF payable from January 2014 to May 2014	1.4	11.00
ETF payable from 2007 to May 2014		5.70

Instructions have been received by the Public Enterprises Department circular No.02/2013 to regularize theses payment with the concurrence of the Treasury. Payment schedules had been prepared during the year 2015.

9. **Liquidated Damages**

SLAEB follows National Procurement Guideline for procurement, As per the instructions of the National Procurement Guideline, AEA claimed Liquidated damages from the relevant suppliers in following manner for the delay in supplying the equipment.

Name of the Supplier	Equipment	Contract Amount	Delay	Deducted %	Amount claimed
Secura Tech (PVT) Ltd	Electronic Personnel Dosimeters	910,000	10 weeks	10%	91,000
Photon Technologies Pvt Ltd	Hand held Contam. Monitor 5 Nos.	6,975,000	10 weeks	10%	697,500
Boomi Tech (PVT) Ltd	In-situ gamma spectroscopy system	13,970,000	10 weeks	10%	1,397,000
Boomi Tech (PVT) Ltd	Mobile Gamma Spectr.System for Radiol. Food Screening	13,090,000	10 weeks	10%	1,309,00
Boomi Tech (PVT) Ltd	Collimator & Lead Shield	890,000	10 weeks	10%	89000
Secura Tech (PVT) Ltd	Liquid Scintillation Counter	2667000	10 weeks	10%	266,700
CDS Promotions (PVT) Ltd	Exhib. Model for Isotop Hy. Section		10 weeks		57,810

Total Claimed Amount Rs**.** **5,095,160**

Total Claimed amount is accounted as Capital Gain under Capital & Reserves in the Statement of Financial Position and in the Statement of Equity.

10. Repeals and Savings

Assets and liabilities belonged to the Atomic Energy Authority (AEA) were separated with effect from 01.01.2015 vest in the Board or Council, as the case determined by the Hon. Minister of Power & Energy as described in the Part IV, chapter XIV sub no. 90 of the Sri Lanka Atomic Energy Act No. 40 of 2014.
The detailed schedule is given below.

Values in Rs

Description	**SLAEB**	**SLAERC**	**Total**
Current Liabilities	39,251,081	211,635	39,462,716
Non Current Liabilities	20,042,030	5,414,756	25,456,786
Capital R equity Equity	864,203,322	10,066,975	874,270,297
Current Assets	63,433,716	1,647,936	65,081,652
Non-Current Assets	860,064,717	14,043,430	874,108,147

SLAEB = Sri Lanka Atomic Energy Board
SLAERC = Sri Lanka Atomic Energy Regulatory Council

all the staff other than transferred to SLAERC, all contracts and agreements entered into, all permits and memorandum of understandings, all the court cases pending and proceeding, all judgments and orders made favorable or against, all interests, rights, which relevant to Sri Lanka Atomic Energy Board have been transferred with effect from 01-01-2015 from Atomic Energy Authority to Sri Lanka Atomic Energy Board.

11. Income Tax

The Computation of Income Tax is based on the rental income and the interest incomes receive for the taxable period. It is being set off against the receivable balance in the Economic Service Charge.

Economic Services Charge - Balance as at 1-1-2015 Rs. 87,422
Income Tax Liability for the year 2015/2016 Rs 291,541
Payable balance as at 31-12-2015 Rs. 204,119

ATOMIC ENERGY AUTHORITY
STATEMENT OF AFFIRES
AS AT 01st JANUARY 2015

(All amounts are in Sri Lankan Rupees

Description	Note	Total	AEB	AERC	Description	Note	Total	AEB	AERC
Current Liabilities	3	64,919,502	59,293,111	5,626,391	Current Assets	1	65,081,652	63,433,716	1,647,936
					Non Current Assets	2	874,108,147	860,064,717	14,043,430
Accumilated Capital	4	874,270,297	864,205,322	10,064,975					
		939,189,799	923,498,433	15,691,366	-	-	939,189,799	923,498,433	15,691,366
					C/F Balance			864,205,322	10,064,975

NOTES TO THE STATEMENT OF AFFIRES
AS AT 01-01-2015

Note -1

Current Assets

Cash and Cash equivalent	
as at 31-12-2014	8,299,935
Transferred to SLAEB	(8,299,935)
End Balance as at 1-1-2015	-
Receivables	
as at 31-12-2014	36,428,666
Transferred to SLAEB	(34,780,729)
Transferred to SLAERC	(1,647,936)
Remaining Balance at the AEA as at 1-1-2015	-
Inventories	
as at 31-12-2014	4,629,983
Transferred to SLAEB	(4,629,983)
End Balance as at 1-1-2015	-
Prepayments	
as at 31-12-2014	2,524,725
Transferred to SLAEB	(2,524,725)
End Balance as at 1-1-2015	-
Other Current Assets	
as at 31-12-2014	13,198,344
Transferred to SLAEB	(13,198,344)
Remaining Balance at the AEA as at 1-1-2015	-

Note -2

Non - Current Assets

Work In Progress	
as at 31-12-2014	486,617,792
Transferred to SLAEB	(486,617,792)
End Balance as at 1-1-2015	-
R & D On-Going Projects	
as at 31-12-2014	10,877
Transferred to SLAEB	(10,877)
End Balance as at 1-1-2015	-
Property, Plant & Equipment	
as at 31-12-2014	213,826,901
Transferred to SLAEB	(199,783,471)
Transferred to SLAERC	(14,043,430)
End Balance as at 1-1-2015	
Land & Building	
as at 31-12-2014	173,620,727
Transferred to SLAEB	(173,620,727)
End Balance as at 1-1-2015	-

	Unusable Items		
		as at 31-12-2014	31,850
		Transferred to SLAEB	(31,850)
		End Balance as at 1-1-2015	-
Note -3	**Current Liabilities**		
	Payable		
		as at 31-12-2014	39,462,716
		Transferred to SLAEB	(39,251,081)
		Transferred to SLAERC	(211,635)
		End Balance as at 1-1-2015	-
	Non Current Liabilities		
		as at 31-12-2014	25,456,786
		Transferred to SLAEB	(20,042,030)
		Transferred to SLAERC	(5,414,756)
		End Balance as at 1-1-2015	-
Note -4	**Accumulated Capital**		
		as at 31-12-2014	874,270,297
		Transferred to SLAEB	(864,205,321)
		Transferred to SLAERC	(10,064,976)
		End Balance as at 1-1-2015	**(0)**
	Deficit		
		as at 31-12-2014	123,514,269
		Transferred to SLAEB	(119,535,814)
		Transferred to SLAERC	(3,978,455)
		End Balance as at 1-1-2015	
	Capital Gain		
		as at 31-12-2014	1,187,150
		Transferred to SLAEB	(1,187,150)
		End Balance as at 1-1-2015	-
	Accumulated Fund		
		as at 31-12-2014	86,390,208
		Transferred to SLAEB	(78,877,913)
		Transferred to SLAERC	(7,512,295)
		End Balance as at 1-1-2015	-
	Capital Grant		
		as at 31-12-2014	910,207,208
		Transferred to SLAEB	(903,676,072)
		Transferred to SLAEB as Reserve	(257,438,151)
		Transferred to SLAERC	(6,531,136)
		End Balance as at 1-1-2015	-

NATIONAL CENTER FOR NON DESTRUCTIVE TESTING
STATEMENT OF FINANCIAL PERFORMANCE
FOR THE YEAR ENDED DECEMBER 31 -2015

Value in Rs.

	Notes	2015 Rs.
Revenue	**1**	24,549,507
Total Revenue		**24,549,507**
Wages, Salaries and Employee Benefits	**2**	(19,002,814)
Supplies & Consumable Used	**3**	(2,015,568)
Other Recurrent Expenditure	**4**	(16,592,947)
Total Expenditure		(37,611,328)
Deficit for the year		**(13,061,821)**

Notes to the accounts as at 31-December 2015		2015 Rs.	
1	**Revenue**		
	NDT Inspection	14,590,863	
	NDT Training Course	5,064,892	
	NDT Certification	69,750	
	Other Income	4,824,002	
		24,549,507	
2	**Wages, Salaries and Employee Benefits**		
	Salary	8,117,770	
	Other Allowance	3,389,752	
	Cost of Living	3,042,331	
	Employees Provident Fund	1,671,759	
	Employees Trust Fund	335,066	
	Additional Allowance	1,628,145	
	Overtime/Weekend payment	106,205	
	Medical Encashment	711,785	
		19,002,814	
3	**Supplies & Consumable Used**		
	Office Consumables & Stationary	440,527	
	Laboratory Consumables	1,551,240	
	Uniforms	23,800	
		2,015,568	
4	**Other Recurrent Expenditure**		
	NDT Training Course	938,775	
	NDT Inspection	6,084,260	
	Staff Training	162,250	
	Transport	862,771	
	Electricity	2,576,556	
	Telephone	272,189	
	Telex, Fax, IDD	216,365	
	Water	111,128	
	Building Maintenance	1,998,194	
	Security	2,947,280	
	Training Programme	72,159	
	Equipment Maintenance	53,932	
	Staff Welfare	18,269	
	Travelling & Subsistence		8,155
	Exhibition		2,659
	Insurance	44,357	
	Printing & Publication	108,632	
	Advertisement	24,375	
	NDT Certification	50,744	
	Research & Development		9,170
	Miscellaneous		5,685
	Rates & Taxes		45
	Postage	25,000	
		16,592,947	

Note: The above figures are excluding depreciation of non-current assts.

SRI LANKA GAMMA CENTER
STATEMENT OF FINANCIAL PERFORMANCE
FOR THE YEAR ENDED DECEMBER 31 -2015

Value in Rs.

	Notes	2015 Rs.
Revenue	**1**	44,267,647
Total Revenue		44,267,647
Wages, Salaries and Employee Benefits	**2**	(14,623,343)
Supplies & Consumable Used	**3**	(18,974,020)
Other Recurrent Expenditure	**4**	(15,372,317)
Total Expenditure		(48,969,679)
Deficit for the year		**(4,702,032)**

Notes to the accounts as at 31-December 2015		2015 Rs.
1	**Revenue**	
	Sales Income	44,267,647.08
2	**Wages, Salaries and Employee Benefits**	
	Salary	4,649,214.67
	Employees Trust Fund	197,549.27
	Employees Provident Fund	990,894.82
	Cost of Living	1,990,255.81
	Trainee Allowance	41,250.00
	Overtime	3,070,322.59
	Other Allowance	2,203,161.00
	Additional Allowance	1,056,020.03
	Medical Encashment	424,675.00
		14,623,343.19
3	**Supplies & Consumable Used**	
	Fuel & lubricants	709,116.08
	Office Consumables & Stationary	99,852.24
	Laboratory Consumables	1,728,350.90
	Co 60^0 decay Cost	16,394,400.28
	Uniforms	42,300.00
		18,974,019.50
4	**Other Recurrent Expenditure**	
	ISO 13485 certification	694,518.30
	Consultancy payment-ISO 13485	90,000.00
	Workshop, Seminar, Sympos	73,282.96
	Staff Training	431,583.15
	Transport	1,122,095.87
	Electricity	4,137,902.08
	Telex, Fax.IDD	6,947.35
	Telephone	309,689.49
	Water	108,825.40
	Vehicle maintenance	17,004.25
	Building Maintenance	915,620.39
	House Rent	422,500.00
	Incidental exp. visiting sci	14,012.14
	Security	2,907,496.53
	Man power	2,261,426.58
	Clearing charges	5,388.00
	Equipment Maintenance	1,150,028.18
	Miscellaneous expenses	74,088.32
	Travelling & Subsistence	25,277.00
	Welfare	32,669.00
	Insurance	369,574.47
	Advertisement	141,800.00
	Printing & Publication	12,000.00
	Research & Development	39,296.12
	Postage	9,291.00
		15,372,316.58

Note: The above figures are excluding depreciation of non-current assts.

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கணக்காய்வாளர் தலைமை அதிபதி திணைக்களம்
AUDITOR GENERAL'S DEPARTMENT

මගේ අංකය எனது இல. My No. POE/B/SLAEB/1/15/10 ඔබේ අංකය உமது இல. Your No.

දිනය திகதி Date 26 October 2016

The Chairman,

Sri Lanka Atomic Energy Board

Report of the Auditor General on the Financial Statements of the Sri Lanka Atomic Energy Board for the year ended 31 December 2015 in terms of the Section 14(2)(c) of the Finance Act, No.38 of 1971

The audit of financial statements of the Sri Lanka Atomic Energy Board for the year ended 31 December 2015 comprising the statement of financial position as at 31 December 2015 and the statement of financial performance, statement of changes in equity and cash flow statement for the year then ended and a summary of significant accounting policies and other explanatory information, was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with the Section 13(1) of the Finance Act, No.38 of 1971 and Section 76(3) of the Sri Lanka Atomic Energy Act, No.40 of 2014. My comments and observations which I consider should be published with the Annual Report of the Board in terms of Section 14(2)(c) of the Finance Act appear in this report. A detailed report in terms of Section 13(7)(a) of the Finance Act will be furnished to the Chairman of the Board in due course.

1.2 Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Sri Lanka Public Sector Accounting Standards and for such internal control as the management determines is necessary to enable the preparation of financial statements that are free from material misstatements whether due to fraud or error.

අංක 306/72, පොල්දූව පාර, බත්තරමුල්ල, ශ්‍රී ලංකාව, . - இல. 306/72, பொல்துவ வீதி, பத்தரமுல்லை, இலங்கை. - No. 306/72, Polduwa Road, Battaramulla, Sri Lanka
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1.3 Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards consistent with International Auditing Standards of Supreme Audit Institutions (ISSAI 1000 – 1810). Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Board's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of financial statements. Sub-sections (3) and (4) of Section 13 of the Finance Act, No.38 of 1971 give discretionary powers to the Auditor General to determine the scope and extent of the audit.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

1.4 Establishment of the Sri Lanka Atomic Energy Board

The Atomic Energy Authority established under the Atomic Energy Authority Act, No.19 of 1969 had been repealed with effect from 31 December 2014 and Sri Lanka Atomic Energy Board and Sri Lanka Atomic Energy Regulatory Council had been established with effect from 01 January 2015 under the Sri Lanka Atomic Energy Act, No.40 of 2014.The promotion and encouragement of the utilization of the nuclear science and technology for the purposes of national development are done by the Sri Lanka Atomic Energy Board. The net assets of the Atomic Energy Authority valued at Rs.864,205,322 had been vested in the Board at the establishment of the Board.

1.5 Basis for Qualified Opinion

My opinion is qualified based on the matters described in paragraph 2.2 of this report.

2. Financial Statements

2.1 Qualified Opinion

In my opinion, except for the effects of the matters described in paragraph 2.2 of this report the financial statements give a true and fair view of the financial position of the Sri Lanka Atomic Energy Board as at 31 December 2015 and its financial performance and cash flows for the year then ended in accordance with Sri Lanka Public Sector Accounting Standards.

2.2 Comments on Financial Statements

2.2.1 Sri Lanka Public Sector Accounting Standards

According to the Sri Lanka Public Sector Accounting Standards 07, when there are significant differences between the carrying value and the fair value of items of property, plant and equipment those should be revalued. Nevertheless, the assets which had been valued at cost over the long period had not been revalued at the time of vesting in the Board.

2.2.2 Accounting Policies

The basis of depreciation of the Cobalt 60 Source shown under the property, plant and equipment had not been disclosed in the financial statements. The depreciation of the Cobalt 60 Source, recognized in respect of the year 2013 before the commencement of commercial activities of the Gamma Centre under the Atomic Energy Authority in the year 2014, amounting to Rs.10,044,000 had been brought to account as deferred expenditure. Even though it had been stated under the disclosures in the financial statements that the said amount will be written off against the future earnings, either that expenditure or a part thereof had not been written off against the income earned

in the years 2014 and 2015. That amount had been shown as a deferred expenditure even in the Statement of Financial Position as at 31 December 2015 without recognizing a specific policy on the write off.

2.2.3 Unexplained Differences

The following observations are made.

(a) Reconciliation of the value of the property, plant and equipment appearing in the financial statements with the value appearing in the Register of Fixed Assets revealed a difference of Rs.280,406.

(b) Reconciliation of the income in the statement of financial performance of the National Centre for Non-destructive Testing presented with the financial statements with the relevant schedules revealed a difference of Rs.817,434.

2.2.4 Lack of Evidence for Audit

The transfer of 07 items of fixed assets of book value amounting to Rs.190,768,275 of the Atomic Energy Authority had been transferred to the Sri Lanka Atomic Energy Board on 01 January 2015 without carrying out a physical survey. As such confirmation of the existence of those assets could not be obtained in audit.

2.3 Accounts Payable

Action had not been taken during the year under review for the settlement of a sum of Rs.16,601,305 payable to the Employees' Provident Fund.

2.4 Non-compliance with Laws, Rules, Regulations and Management Decisions

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Instances of non-compliance with the following Laws, Rules, Regulations and Management Decisions were observed.

Reference to Laws, Rules and Regulations	Non-compliance
(a) Financial Regulations of the Democratic Socialist Republic of Sri Lanka	
Financial Regulation 371(2)	Even though the sub-imprests should be settled immediately after the completion of the purpose, an audit test check revealed that advances granted in 19 instances from January to August of the year under review had been settled after delays ranging from 47 days to 320 days.
(b) Public Enterprises Circular No.95 of 14 June 1994	The Board had paid a sum of Rs.1,950,000 as Incentive Allowance for the year 2015 to its employees without formulating an Incentive Allowances Scheme and obtaining the approval of the General Treasury.

3. Financial Review

3.1 Financial Results

According to the financial statements presented, the operations of the Board for the year under review had resulted in a deficit of Rs.20,985,772.

4. Operating Review

4.1 Performance

According to the Sri Lanka Atomic Energy Act, No.40 of 2014, the objectives of the Board are the promotion and encouragement of the peaceful application of the nuclear technology and provide services using that technology, conduct of researches in that connection, the promotion of new strategies and providing assistance in that connection, supply of services for protection from radiation and engage in activities involving ionizing radiation and complementary techniques for commercial and other purposes.

4.2 Management Activities

The following observations are made.

(a) The Multipurpose Gamma Irradiator Facility Centre had been constructed as a Board of Investment Project at a cost of Rs.746.6 million on a land obtained on a 30 year lease by the Ministry of Science and Technology. That Centre had been vested in the Board in the year 2015 and the following observations are made in that connection.

(i) The chief customer who contributed 97 per cent of the income from sale of services in the year 2015 was lost by the Centre and the machinery operations of the Centre had been ceased from 28 January 2016. The income for the first quarter of the year 2016, as compared with the first quarter of the year 2015, had decreased by 72 per cent. As the Gamma Centre had depended on a single institution for the sale of services, the Centre had encountered a risky situation regarding the future operations. An adequate course of action had not been adopted to identify the potential future risk and to identify and encourage the alternate customers in the future.

(ii) Even though the operations of the Centre had been closed down as (i) above, any clear decrease in its recurrent expenditure as compared with the expenditure of the operating period was not shown. The allowances such as the special overtime, holiday pay, etc. paid to the employees for operating periods had been paid continuously without the approval of the Department of Management Services.

(iii) The attention of the Government had not been paid to direct the orders of the Government institutions to the Sri Lanka Gamma Centre for irradiation facilities by utilizing the resource of the Sri Lanka Gamma Centre which is the only government institution having irradiation facility and explore the possibility of saving foreign exchange.

(b) The following observations are made in connection with the relocation of the building complex of the Board at the Malabe Information Technology Park.

(i) Even though a Project Director had been appointed from August 2015 for the relocation activities, he had been paid salaries and other allowances amounting to Rs.516,946 up to 31 December 2015 without entering into an agreement containing the particulars of his functions and terms and conditions of service.

(ii) All activities related to the construction of buildings for relocation had been completely ceased with effect from June 2015 due to the objections raised by the people of the area that the activities of the Board may result in problems to the environment and adverse impacts on the health of the general public. As the construction work had been ceased over a period of about 10 months up to the date of audit resulting a delay relocation work, the possibility of creating the following adverse situations was observed.

- Delays caused to the proposed New Kelani Bridge Project due to the delay in relocation of the Board from Orugodawatta to Malabe resulting in raising the cost of that Project and the delaying benefits accruing to the general public from early completion of the Project.

- In view of the delay in broadening of the activities of the Board the benefits that would accrue to the country through the utilization of nuclear science and technology would also be delayed.

(c) A sum of Rs.820,000 had been paid by 31 December 2015 for the new Accounting Software System introduced to the Board. Action had not been taken even up to 24 May 2016 to get the system examined by a Consultant to find out whether it is functioning properly. Even though a manual set of books should be maintained until the employees are competent to carryout the work with the software system, the parallel run had not been maintained according to the books for the year 2015. As such an assessment of the errors of the software system could not be obtained.

4.3 Transactions of Contentious Nature

Procurement work had been done and supplier had been selected for the supply, transport and install Cobalt 60 Source 250KCi for the improvement of the capacity of the Sri Lanka Gamma Centre and a sum of Rs.125,000,000 for that had been received on 28 December 2015 from the Department of Treasury Operations. Nevertheless, ordering for the Cobalt 60 Source had been stopped by the date of audit on 27 April 2016 for economic reasons as the Centre had been deprived of the major customer's order instead of the expected improvement of the orders. Even though the Treasury had specifically emphasized that the provisions of Rs.125,000,000 should be utilized only for the intended purpose, money had been deposited in a Savings Account on 18 January 2016 on the approval granted by the Board of Directors on 08 January 2016 without obtaining the approval of the Treasury.

4.4 Idle and Underutilised Assets

The Computer Software Package for automation of the Stores purchased by the Atomic Energy Authority in the year 2011 for Rs.389,375 had been fully depreciated by 31 December 2014 and that had been eliminated from use without making any use of the system.

4.5 Staff Administration

The following observations are made.

(a) Even though the approval for two senior level posts of Director Finance and Director Administration had been obtained on 04 December 2015 for making two Independent Divisions for Finance and Administration of the Board, those two posts remained vacant up to 15 October 2016. The duties of those posts had been covered by the Senior Deputy Director (Finance and Administration) holding an unapproved post. The independence of the Divisions had not been ensured.

(b) Even though a post of Plant Operations Manager had been approved for the Sri Lanka Gamma Centre, the operation and maintenance of the plant had not been subjected to the supervision of a professionally qualified officer as that post remained vacant.

5. Accountability and Good Governance

5.1 Internal Audit

An adequate part of the Internal Audit Plan had not been covered as adequate staff had not been assigned to the Internal Audit Division.

5.2 Procurement Plan

Even though the Board had prepared a Procurement Plan, that was not in conformity with the Action Plan and the Budget prepared.

5.3 Budgetary Control

The budget had been revised in 5 instances during the year under review. Variances ranging from 32 per cent to 294 per cent had existed between the budgeted expenditure and the actual expenditure under 14 Objects. As such it was observed that the budget had not been made use of as an instrument of effective management control.

6. Systems and Controls

Deficiencies in systems and controls observed during the course of audit were brought to the notice of the Chairman of the Board from time to time. Special attention is needed in respect of the following areas of control.

Areas of Systems and Controls	Observations
(a) Fixed Assets Control	An adequate attention had not been paid for the valuation, recording and protection of the property, plant and equipment and for the efficient utilization of the resources of the Board.
(b) Staff Administration	Duties had not been properly assigned among the employees and action had not been taken to settle the existing salary anomalies.

H.M. Gamini Wijesinghe

Auditor General

Explanations given by the Management regarding the deficiencies indicated in the Auditor General's Report for the financial statements of the year ended 31st December, 2015 of the Sri Lanka Atomic Energy Board

2.2 Comments on Financial Statements

2.2.1 Sri Lanka Public Sector Accounting Standard

Since the board of survey for 2015 had not been completed up to 31.12.2015, the final accounts for the year ended 31.12.2015 were prepared based on the book values of the fixed assets as at 31.12.31. Necessary adjustments are being done in accounts on the annual provision for depreciation of the physical assets in 2015, based on the board of survey for 2014, including the assets acquired in 2015, according to the recalculation of efficient and economical life span of such assets.

2.2.2 Accounting Policies

Multi-Functional Gama Radiation Project which had been operated under the Ministry of Technology and Research was assigned to Sri Lanka Atomic Energy Board in August, 2015. Thereafter, this project has been included in the financial statements of the Board for the year ended 31.12.2015.

It was decided to write off these expenditures based on the writing off policy on the deferred expenditure from year 2016. However, even this year, the expected income was not received. Hence, it has been decided to write off in future as per the decision of the Board of Directors.

2.2.3 Unexplained Inconsistencies

(a) Before this, in several occasions, necessary arrangements were made to identify relevant inconsistencies. However, it was unable to identify any documents of the assets for previous years. Therefore, according to the re-valuation of the assets, action will be taken in 2016 to reconciliate the balance in the relevant schedule, comparing with physical outstanding balance found in the book.

(b) Since there were shortcomings in the schedule presented to audit division by the National Center for Non-Destructive Tests, such difference was observed.

2.2.4 Non-availability of Sufficient Evidence for Audit

Assets were transferred based on the balance in the asset schedule as at 01.01.2015. The assets purchased for Radiation Protective Division and the assets used by the staff attached to Regulatory Board were transferred to that Board. After completion of board of survey for 2015, action will be taken in 2016 to do relevant adjustments to the accounts and to prepare the fixed asset schedule.

2.3 Payable Accounts

The Board did not have sufficient income to settle the balance existed in 2015 for Employee Provident Fund and Employer Trust Fund. A part of such balance has been paid from 1.3 million rupees generated by the Board in 2016.

National Budget Department was requested to make additional funds to settle the said balance, nevertheless, it has advised to submit a memorandum in this regard. However, the Ministry of Power and Renewable Energy has agreed to provide necessary funds.

2.4 Non-compliance with Laws, Regulations and Management Decisions

(a) F.R. 371-(2)

This situation has arisen due to the delay occurred in relevant invoices by certain procurement entities when they are supplying goods only for cash. Necessary actions have been taken to control such situation.

(b) Incentive payment scheme for 2015 has been put into practice with the approval of the Board of Directors, by apprising the staff through an incentive scheme based on the performance of the staff of Sri Lanka Atomic Energy Board.

Board of Directors has recommended implementing the said scheme having all other necessary approvals including from the Treasury, by further improving the same for

2016. Accordingly, action has been taken to send the new incentive payment scheme approved by the Board of Directors, to the Department of Public Enterprises for its approval.

3. Financial Review

3.1 Financial Results

It is agreed. In terms of the provisions in the Act No.40 of 2014 of Sri Lanka Atomic Energy Board, the Free TLD service is provided to assess the count of radiation in government hospitals in order to protect the public from radiative impact. Such service is provided at a reasonable rate for other institutions too. Necessary digital services are also provided for the protection activities. Increase in recurrent expenditure in this nature, non-provision of adequate funds by the Treasury for recurrent expenditure and non-provision of additional funds for increased payment for employees through national budget etc. have been the reasons for considerable deficiencies in the operational results of the Board.

4. Operational Review

4.1 Performance

The research projects relevant to the activities to be carried out in terms of the Act No.40 of 2014 of Sri Lanka Atomic Energy Board have been indicated in annex 4.1.

4.2 Management Activities

(a)

(i) Lalan Rubber (Pvt) Company was the major supplier for Sri Lanka Gama Center from its inception in 2014. This company received the tender on supply of surgical glows for 2014 for the Ministry of Health and manufactured necessary surgical glows, and supplied such glows by sterilizing them in SLGC. However, the tender prepared by the Ministry of Health for the supply of such surgical glows was not awarded for year 2015. The tender for 2016 was awarded to Lalan Rubber (Pvt) Company, but the Ministry of Health was in delay in awarding of such tender and therefore the income expected from SLGC has gone down in considerable amount.

SLGC, from before its beginning, made arrangements to refer the procurers in multi sectors to it. Therefore, 16 institutions in 2014, and 17 such institutions in 2015 have had business related negotiations with SLGC. 2 institutions in 2014 and 21 such institutions in 2015 have tested their products by using Gama technology facilities.

Out of these institutions, Industrial Clothing (Put) Ltd, a supplier of hand glows in large scale tested this technology. Accordingly, it carried out radiation for 24.64 meter cubic of hand glows (box of 527 glows) and supplied to the market.

Kayak Surgi Pharma tested the Gama technology successfully. Accordingly, in first time, non-sterilized surgical aprons were imported from India and supplied to private hospitals by sterilizing them through facility in Gama Center. Further, the said company which identified the potentiality of the production of such items started to manufacture them within Sri Lanka. The Ministry of Health has already awarded a tender for supply of 250,000 surgical aprons to the said institution. Consequently, today, micro biology test for determination of the formula of such surgical aprons manufactured in Sri Lanka is carried out within SLGC laboratories. Based on the results of its success, it is able to start radiation activity for relevant quantity of such aprons. This Kayak Surgi Pharma, in 2015 for 13 times and in 2016 (May) for 1 time obtained the worth of rupees of 155,709.49 of radiation service from SLGC.

In addition to this, in 2015, Rs. 440,589 of income has been generated through food radiation facility. Accordingly, Cinnatopia (Pvt) Ltd and Millennium Teas (Pvt) Ltd have carried out for radiation requirement on 15,000 kg pepper and 7,875 kg tea respectively. Apart from this, in 2015 Rs.369, 554.32 and in 2016 (up to May 31) Rs.135, 578.28 of

income has been generated through laboratory tests and sample radiation of small scale enterprises and other samples.

Furthermore, action has been taken to import the products of foreign companies for SLGC. As a result, a negotiation is in progress with Shamrock group of companies in India and Primus Gloves Company in India. Moreover, ISO 13485 certificate was obtained for export trade promotion.

Above explanations have been referred to the Auditor General on 26th May, 2016 by the Board in sending replies to the Auditor General's report in terms of the section 14 (2) (c) of the Financial Act.

(ii) Business operations of Sri Lanka Gama Center were completely stopped from moth of April in 2016.
Though there were no business operations, a work team was deployed up to 30-05-2016 under daily basis and shift system for day to day maintenance of the equipment room, research activities and sample radiation etc.
Action has been taken to obtain approval from the Department of Management Services for the payment made for operations.
Further, this center took action to maintain the expenditure in a minimum level since before this. Since the above operations have to be carried out for the sustainability of the equipment room, reducing expenditure in a great amount would become difficult.

(iii) Both SLGC and SLAEB paid their attention on the above matter and accordingly a cabinet paper which requets to purchase and carry out the radiation on every surgical product by SLGC in procurement of such items by the Ministry of Health was referred to the Cabinet of the Ministers.

(b)

(i) There was a public protest against the land which had been allocated at Malabe to relocate the Sri Lanka Atomic Energy Board. Due to this reason, in September 2016, instead of that land, the government decided to allocate a new land from the month of September 2016 at Orugodawatta area. Until the above decision is made, since the work of phase 1 and 2 of the building project previously decided had to be carried out, a project director has been recruited with effect from the month of August in 2015. The functions carried out by the project director have been given in brief. Though there was a delay in reaching an agreement, from the month of August, the relevant functions have been assigned by the Chairman. His salary and other allowances are paid based on the performance report with the authorization of the Director General. Issuance of letter of appointment of the project director and signing an agreement with the service condition were carried out on 30th July 2015 and 31st December 2015 respectively.

* Creating a new background to start the construction works of the phase 1 which had been stopped on the instructions given by Central Environmental Authority in June 2015, and the actions taken to make the people of that area, government officers and the politicians of the relevant areas aware.

* In addition to the above activities regarding the phase 1 and 2, the followings have been carried out.
  - Appointing a technical evaluation committee (TEC) to assess the tenders of the contractors for consultancy service and obtaining its recommendations.
  - Submitting such recommendations to a cabinet procurement committee and getting approval for the same and awarding contract of consultancy service.
  - Preparing all strategy plans for phase 2.

- Getting prepared the BOQ, engineering estimates and tender documents.

* In addition to the relocating activities, managing and settling the situations with problems relating to due invoices of the contractor (SLLRDC) for construction of the National Center for Non-Destructive Tests (NCNDT) operated under the purview of SLAEB, and providing consultancy service to the project director on the direction of the Chairman of the Board to prepare recommendations for such payments.

- Preparation of plans, bill of quantities, engineer's estimates and tender documents for Exposure Room at NCNDT. Relocating this building is also a task of this project.

Works of this relocating project were stopped from the month of June 2015. Therefore, without making recruitment, including the project secretary to the project management unit to be established in terms of management circular No.33 and all above functions have been carried solely by the project director.

(ii) Observations of the Auditor General are accepted. The following disadvantages can be created as decided not to construct this project at Malabe due to the groundless protests launched by the people of the area.

(b) Bearing of un-necessary expenditure in means of economy due to the occurrence with problems and delay in implementation of national projects of the country.

However, the following efforts were made to bring this project into the situation where which can be implemented under my supervision with the help of the senior management and the project director.

- Attention of the Colombo District Development Committee was drawn to the necessity of starting this construction. Political leaders and villagers have been called and explained the prevailing situation under the guidelines of the present Chairman of the District Development Committee, Government Agent and the Secretary of our Ministry.

(c) Apart from the relevant software system to the accounts, a parallel Run method has been implemented from 2016. Audit and Management Committee has given instructions to feed the data sample into the software system by the supplier itself and obtain a report on its operation before end of December 2016.

4.3 Transactions which lead to Contradictions

A supplier was selected for cobalt 60 of 250kCi by calling international tenders and whose tender has been made valid up to 04/08/2016 after a negotiation with the relevant supplier, even the service of Gama Center had less demand.

Further, as there was no sufficient development in trade activities within 2016, according to the demand prevailed, it was decided to procure only the half of 125 kCi demanded. If this source is taken without operational activities, its operational capacity will falloff and cause loss. Therefore, action has been taken as mentioned above, in order to reduce such loss. Even though this source is not utilized, its operational capacity will naturally come down. Within 5 year, this has shown 50% of the quantity found. Therefore, this has to be used for 24 hours to get maximum results. Since it was expected that the order would receive within a short period of time, Rs.125 million funds obtained from Treasury for the procurement has been deposited in a saving account with the approval of the Board of Directors. Action is being take to complete this procurement before end of 2016.

4.4 Idle and underutilized Assets

Preparation of invoices and payment vouchers has been carried out by using this software system upto 31/12/2014. Due to this, efficiency of the relevant staff improved by 70% in amount. There were employee related problems in the government institution

which supplied this software. Therefore, our institution wanted to improve the use of computer system and this software system was removed from the use with a view of having a new software system which suits to our requirement.

4.5 Staff Administration

Designation of Senior Deputy Director was revised on 13.12.2013 as director. Scope of the functions coming under the post of director (finance and administration) increased and therefore, approval from the Department of Management Services was received on 03.09.2014 to allocate the functions of such post to two new posts of director (finance) and director (administration) in order to make the administration and finance divisions independent. However, new Act of Sri Lanka Atomic Energy Board was in practice from the year 2014, and as a result, in latter part of 2014, the Ministry of Technology and Research had given its instructions to stop new recruitments temporally.

Sri Lanka Atomic Energy Board started to function from 01-01-2015. Approval of the Department of Management Services was received on 04.12.2015 to apply the scheme of recruitment (with amendments) of the staff. Consequently, the senior deputy director (finance and administration - acting) has been appointed to the post of director (finance) on acting basis, from the month of September 2016. Applications have been called internally to fill the vacancy in the post of director (administration).

(b) On assignment basis, an officer was recruited to this post approved as at April 2013 to Sri Lanka Gama Center, from May 2013 to April 2014.

On 07.04.2014 and 08.12.2014, applications were called through newspaper advertisement to recruit a permanent officer to this post. However, qualified persons had not applied for. This post falls under the salary group of HM 1-1. It was observed that having no suitable salary to the qualifications required has become the reason for non-receipt of number of adequate applications. Hence, the management is in the process of discussion to reduce the basic qualifications mentioned in the relevant scheme of recruitment or to create a post of deputy director instead of this post.

04 employees of the Board were given training on the operation of equipment room through the institution which supplied such equipment and other institutes provide similar service. Relevant machine is operated under the supervision of these employees. Running rate of the machine in 2015 and 2016 is 89%.

5. Accounting and Good Governance

5.1 Internal Audit

Audit reports have been published by examining the areas more than 50% of the areas mentioned in the audit programs approved in 2015. Non-availability of sufficient staff in the internal audit division compared to the broad functions of the institution was the major reason caused to not to cover other areas included in the program. A new officer has been appointed with effect from October 2016 to the post of internal auditor approved which falls under the salary group of JM. The Audit and Management Committee has proposed to deploy two management assistants in the internal audit division to strengthened it.

Further, the 'post of internal auditor' is the only post in executive grade existing in the internal audit division. This post falls under the middle management level (Salary group of MM-1). A letter requesting the approval of the Department of Management Services to create a post in the senior management group was sent on 12.03.2015, but no reply was received.

5.2 Procurement Plan

Relevant procurement plant and action plan for 2015 were prepared based on the capital budget. Necessary equipment to cater to the demand have been purchased upon the approval of the Board of Directors, by revising procurement plan and capital budget. It was compelled to procure certain scientific equipment required as mentioned above to examining purpose of the problem occurred in 2015 at Norachcholai Power Station.

According to the revision of the action plan, necessary action has been taken to amend the budget estimate and procurement plan from year 2016.

5.3 Budgetary Control

The initial recurrent budget for 2015 was approved by the board decision No.2014-13-309.

As mentioned in the board decision No.2014-13-309 which approved the initial budget, considering the actual expenditure and income within the first 06 months of 2015, approval was obtained through board paper No.2015-07-137 to request Rs.15 million as an additional fund for recurrent expenditure.

Annual budget 2015 was revised from time to time based on the facts mentioned above.

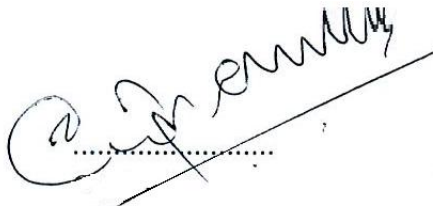
Written instructions have been given to every responsible officer to maintain this record in a right way, from 2016, by carrying out timely review and making revisions to it.

6. Systems and Control

(a) Valuation of assets, plant and equipment has been started. Storekeepers have been given instructions to schedule the assets to be purchased newly, protect such assets and utilize them properly.

(b) Organizational structure for the Sri Lanka Atomic Energy Board established under the Act No.40 of 2014 now is being prepared.

Enrolment of human resources required for the assigned functions of the Board is the main area which was highly considered in preparation of this organizational structure.



Chairman
Sri Lanka Atomic Energy Board

Annexure 4.1

Division	Project Title
Isotope Hydrology	The isotope investigation of ground waters in CKDu endemic zones
	Identification of groundwater discharge in to rivers, streams and costal zones using Radon technology
	Investigation on groundwater dynamics and water quality deterioration in Jaffna peninsula using isotopes and chemical tools
	The investigation on new water drips in Dambulla caves.
Life Sciences	Sustainable Air Pollution Monitoring using nuclear analytical technology.
	Terrestrial Environmental Radioactivity monitoring in Sri Lanka
	Use of portable XRF for the identification of toxic elements in children toys
	Sedimentary record of metal accumulation history in the lagoon of Negombo (Sri Lanka)
	Heavy metal analysis of two edible fish from Nachchaduwa Reservoir in Sri Lanka, North Central Province and Batalagoda Reservoir, North Western Province in Sri Lanka
	Naturally occurring radiation mineral analysis of the Reservoir sand section in the Dorado Natural Gas Discovery, Mannar Basin, Offshore, Sri Lanka.
	Quantification of Radioactive and Heavy Mineral occurrences in Uswetakeiyawa area, Sri Lanka.
General Scientific	Measurement of Baseline data of environmental radioactivity
	Radon Measurement Project
	Improved Assessment of Initial Alarms from Radiation Detection Instruments
Sri Lanka Gamma Centre	Enhancement of shelf life of fish and fishing products by gamma irradiation
Radiation Processing	Supporting Radiation Processing for the development of advance grafted materials for industrial applications and environmental preservation.
	Supporting Radiation Processing of natural polymers for agricultural and environmental remediation