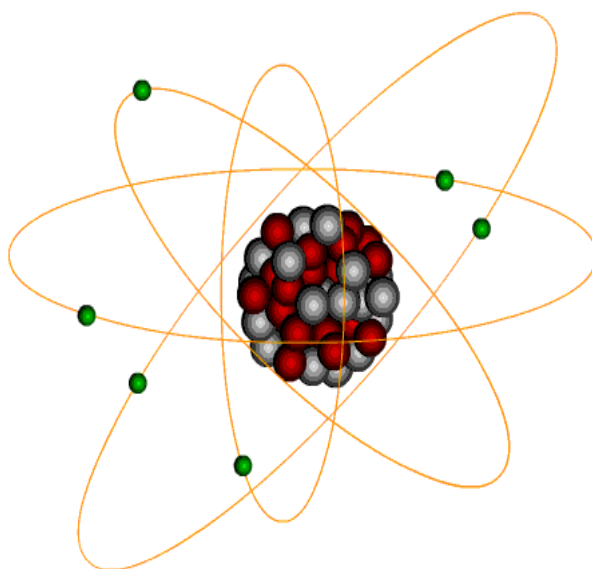


**ANNUAL REPORT- 2013**

**ATOMIC ENERGY AUTHORITY**



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## **ANNUAL REPORT- 2013**

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## **ABOUT US**

The Atomic Energy Authority (AEA) of Sri Lanka was established by the Atomic Energy Authority Act No.19 of 1969.

## **OUR VISION**

The vision of the AEA is, to be a centre of excellence, with emphasis on national relevance and international recognition, for activities related to peaceful applications of nuclear technology with due consideration to safety.

## **OUR MISSION**

- Facilitation of the utilization of nuclear technology to its maximum potential with reference to quality and quantity in a cost effective manner, for socio-economic development of the country; and
- Implementation of a regulatory program conforming to international standards on radiation safety, to ensure protection of workers, public and the environment from potentially harmful effects of ionizing radiation.

## **BOARD OF MANAGEMENT**

The AEA is managed by a Board of Management appointed in terms of Section 2 (2) of the Atomic Energy Authority Act No. 19 of 1969. The Members of the Board of Management from January to December 2013 were:

Dr. Ranjith L. Wijayawardana (Chairman)  
BSc. (Hons) in Physics-1<sup>st</sup> Class, M.Sc. in Physics, PhD in Experimental High Energy Physics (USA)  
(Senior Lecturer, Department of Physics, University of Peradeniya)

Prof. W. Abeyewickreme (Board Member)  
BSc. in Applied Science, SJP, BSc. (Mahidol University, Bangkok), PhD (Liverpool University, England)  
(Head, Department of Parasitology, Faculty of Medicine, University of Kelaniya)

Prof. B.M.A. Oswin Perera (Board Member)  
BVSc. (Ceylon), PhD (Glasgow)  
Retired Professor

Mr. P.P. Gunasena (Board Member)  
Attorney at Law  
(Chairman, Sri Lanka Accreditation Board)

Dr. N.J. Abeygunawardena (Board Member)  
MBBS, MD (Radiology)  
Consultant Radiologist,

Prof. Janitha Abeywickrema Liyanage (Board Member)  
BSc. Sp. Hons, PhD in Chemistry, Professor in Chemistry  
Prof. in Chemistry, Department of Chemistry, University of Kelaniya.  
Director – Gampaha Wickramaarachchi Ayurveda Institute.

Mr. K. R. Uduwawala (Board Member – Treasury Representative)  
BSc. Sp. (Physics), Master of Organizational Leadership (Monash University)  
Additional Director General, Department of Management Services, Government Treasury, Ministry of Finance and Planning

During the period under review the Board held 12 meetings. Matters pertaining to operational activities, staff matters, finance and administration were presented to the Board for policy decisions. The Board also reviewed the physical and financial progress of the Authority.

## Senior Management

NAME	TITLE	QUALIFICATION
Mr. D.G.L.Wickramanayake	Director	B.Sc., M.Sc. (Colombo) M.Sc. (UK)
Mr. H.G.P. Karunaratne	Head, International and Human Resources Division	B.Ed. Colombo DBM (NIBM)
Mr. C. Kasige	Head, General Scientific Division	B.Sc. Special (Peradeniya) M.Sc. (Colombo)
Mr. H.L. Anil Ranjith	Head, Radiation Protection Division	B.Sc., M.Sc. (Colombo)
Mr. M.M.P. Wijesekera	Head, Finance & Supplies Division	Licentiate Certificate of ICASL, DBM (NIBM)
Mr. Vajira Waduge	Head, Life Science Division	B.Sc.(Peradeniya) M.Sc. (Colombo)
Ms. M.C.S. Seneviratne	Former Head, Life Science Division	B.Sc (Sri Jayawardenepura), M.Sc. (Colombo)

## Chairman Review

As in the previous years, AEA continued to work towards its goals of providing benefits to the Sri Lankan community using nuclear technology.

As Atomic Energy Act No. 19 of 1969 was very old and it does not consistent with the latest international requirements, in the relation to application of Nuclear Technology. Approval of the Cabinet of Ministers has been granted to draft a new Act for Atomic Energy Authority on 22-06-2011 as the present The new draft Act contains provisions to meet latest international requirements on radiation protection, nuclear security, transport safety, safeguards and radioactive waste management. The final draft was prepared with the suggestions and amendments agreed with the International Atomic Energy Agency (IAEA) and it was submitted to the Legal Draftsman on 4<sup>th</sup> November 2013 for approval. Corporate Plan for the period 2013 -2017 was prepared & submitted to the Auditor General & Department of National Budget.

The activities of the AEA during the year 2013 are reported under the areas mentioned below.

- (a) Radiation Protection,
- (b) Technical Cooperation Programs of International Atomic Energy Agency (IAEA),

- (c) Nuclear Instrumentation,
- (d) Radiation Dosimetry
- (e) Non-Destructive Testing,
- (f) Radiation Processing
- (g) Nuclear Analytical Services,
- (h) Isotope Hydrology
- (i) Information Services and
- (j) Manpower Development

The AEA continued to provide radiation protection services to the state and private sector organizations to achieve safety norms by performing regular inspections of premises that use radiation sources and radioisotopes. The users who possess radioisotopes or irradiation apparatus (including medical X-rays) have to obtain a license from AEA and in 2013, 186 such licenses were issued. Import/ export of radioactive materials have to be carried out with the approval of the AEA and 522 such authorizations were issued in the year 2013. Inspection of premises that use radiation and radioactive material is also a responsibility of the AEA and the number of such inspections carried out was 138. In addition, 56 approvals were provided for Irradiation room plans after they complied with the recommendations given by the AEA.

Seventy radiation monitoring instruments which belong to AEA and external institutions were calibrated and certificates were issued. Personal Monitoring Service for occupational exposure of radiation workers in the country is carried out by AEA to facilitate radiation safety of workers. 1100 radiation workers were regularly monitored monthly/ bimonthly basis during the year 2013. IT related activities such as Software and hardware maintenance, Management of local area network, repair of nuclear instruments, performance testing of such instrument are also the major support service provided by staff of General Scientific Division carry out Nuclear Technology Programs effectively and efficiently.

In the industrial sector, AEA was able to provide 143 NDT inspection services to industries for it's effective functioning of the machinery used, enabling greater productivity. In addition 211 personnel were trained in NDT technology. AEA is continuing it effort towards to establish a dedicated centre for NDT services including manpower development in order to strengthen it's services required of industrial sector of the country.

Life Science Division (LSD) provides its services to import and export sector, industrial sector, R & D institutions through nuclear analytical services. No. of samples analyzed including milk food for radioactive contamination of during the year is 6912. Analysis of imported milk and fish are important to protect consumers from unwarranted exposure to ionizing radiation.

As a result of R&D activities carried out by Radiation Processing Section, the AEA was able to develop several environmental friendly products using natural polymers & radiation modification techniques. In 2013, Plant growth promoter with fungicidal properties developed using natural polymer delivered to Dragon Fruit Growers Association so as to carry out field trials on infected Dragon Fruit Fields.

The project titled “Establishment of Multi-purpose Gamma Irradiation Facility (MGIF)” at Biyagama is implemented by the Ministry of Technology & Research. The AEA provided technical support for the project. The AEA has recruited and trained necessary manpower and procured necessary equipment for smooth operation of the facility by early January 2014. The facility started test runs in the last week of December 2013.

AEA is functioning as the focal point to International Atomic Energy Agency (IAEA) for obtaining technical assistance under its Technical Cooperation Programme. It also coordinates with other countries such as Japan, Korea. With the assistance of the IAEA and the Japanese and Korean Governments, the AEA continued to develop technical capabilities of the scientists through expert services (19 numbers), fellowships and scientific visits (21 numbers), short term foreign training and seminars for local scientists (140 numbers). In-house human resource development was also promoted through courses conducted for administrative and support staff of AEA.

## Financial Highlights

### Net Income Earned from the external customer services provided in 2013 & 2012

Values in Rs. Million ex.VAT

	Income Source	2013	2012
01	License Fees	3.83	4.06
02	Radiation Protection Services	4.55	7.44
03	Nuclear Instrumentation/Personal Monitoring	1.71	1.60
04	Non Destructive Testing Inspections	4.88	7.74


05	NDT Training Courses	3.07	3.26
06	Nuclear Analytical Services	35.18	32.50
07	Radiation Processing Services	0.11	0.24
	Total	<b>53.33</b>	<b>56.84</b>

Total income had been dropped by 7% in 2013 when compared to the previous year mainly due to following reasons.

1. Income generated from NDT inspections services increased remarkably due to special demand received from Shell Gas PLC and Alston Co. during the year 2012.
2. Similarly, large numbers of spent radiation sources were collected in 2012 on the requests received by several customers. There were no such requests received during the year 2013. Therefore, the generated income from Radiation Protection Services was not up to the expected level.

AEA expects to focus its attention on new income generating sources such as concrete testing, welder qualifications, boiler inspections and new training courses to overcome the above situation.

I wish to thank the Members of the Board of Management, Senior Management and the staff of AEA for their active co-operation in carrying out the above programs successfully, even being in the competitive market situation.



**Dr. R.L. Wijayawardane**  
**Chairman**



# **1. Audit and Management Committee Reviews 2013**

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 Atomic Energy Authority for the year 2013 consisted with the following members.

- a) Mr. K.R.Uduwawala (Treasury Representative) -Chairman to the Audit and  
Management Committee.
- b) Prof. J. Abeywickrema Liyanage - Committee Member
- c) Dr. N.J. Abeygunawardena - Committee Member
- d) Prof. B.M.A.O. Perera - Alternative Member
- e) Mr. P.P.Gunesena - Committee Member (from July 2013)

Above five members are Members of the Board of Directors of Atomic Energy Authority and possess a wide range of experience in scientific, finance, administration and legal fields.

Internal Auditor acts as the Secretary of the Audit and Management Committee. Mr. D.G.L Wickramanayake, Director of the AEA also participates in Committee Meetings.

A representative of the Auditor General (Mr. A.L.J. Wimalaratne) attends meetings as an observer.

## **Meeting of the Committee**

The Committee fulfilled the requirements of the Department of Public Enterprises in conducting Audit and Management Committee meetings. In the Financial year 2013 seven meetings were held.

## **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 following objectives.

- a) To review the continuing impartiality of the internal auditors and their effectiveness.
- b) To address relevant issues raised by the Internal Auditor, according to the Internal Audit Plan, on a regular basis.

- c) To assist the Board in the task of overseeing to ensure that financial reporting is done in compliance with relevant Sri Lanka Accounting and Auditing Standards and other applicable legal requirements.
- d) To assist the Board to ensure that all relevant rules and regulations and circulars issued by the government are complied with continuously reviewing and monitoring, making recommendations to the Board on non compliance.
- e) To review the Internal Audit/External Audit Reports, Management Letters and the recommendations of COPE, and help the Board to take remedial actions.
- f) To assist the Board to introduce and implement adequate internal control system.
- g) To report its recommendations to the Board of Directors soon thereafter the meeting, along with the minutes to facilitate taking corrective measures.

### **Activities of the Committee during 2013**

1. The Audit Committee reviewed and approved the annual Internal Audit plans for the year 2013.
2. The Committee reviewed the Implementation of recommendations of the previous committee meetings and following recommendations were made.
  - i. Committee suggested taking steps to make structural changes and strengthening the Administration Division of the AEA.
  - ii. Auditor General's representative requested the procedures of the internal control of the main activities of the Authority.
  - iii. Committee requested from Auditor General's representative to make arrangements to conduct awareness programme in respect of accountability of the staff of AEA and their responsibility regarding the response to the Auditor General Reports.
  - iv. Committee recommended that manual of procedures should be prepared immediately, laying down the main procedures following at present by AEA.
3. Reviewed the submission of reply to Internal Audit Report on Overtime and weekend payment and Committee expressed concern about the present way of updating of leave register 2012 and instructed that procedures of the staff leave recording should be more transparent and this should be supervised by the immediate supervisor of the Administration Division.
4. Reviewed the Internal Audit Report related to NDT training course and inspection service. Committee was of the opinion that the internal control procedures in respect of NDT training courses have to be improved. Therefore, committee requested to review the present procedures applied to conduct training courses.

Further to above, following recommendations were made.

- \* Steps should be taken to prepare guidelines for preparation of training course budget and strengthen control system in respect of conducting training courses.
  - \* Steps should be taken to appoint independent persons such as a Registrar for registration of applications and issuing certificates etc.
5. Committee suggested that every attempt should be taken to recover outstanding debtors and valid reasons should be given for bad debts write-off in the future.
  6. Committee noted deficiencies mentioned in the internal audit reports and repeatedly recommended either developing existing computerize accounting system or installing a new system suitable to the requirements of the AEA.
  7. Regarding hiring of NDT equipment to outside companies, the Committee did not recommend this service as it is not an objective of the AEA and requested to review the policy on this and suggested to concentrate more on providing NDT services.
  8. Regarding the physical verifications, Audit Committee made following recommendations.
    - i. Committee inquired about reasons for not completing physical verifications of office equipment, computer software as at 21.12.2012.
    - ii. Steps should be taken to dispose unusable items according to the financial regulations.
    - iii. Verify as to why the deficit stock items and equipment are not appeared in the survey reports and losses should be recovered or write-off according to the financial regulations.
  9. Committee noted deficiencies mentioned in the internal audit report and instructed that Administration Division should maintain attendance and leave records for all staff members.
  10. Audit Committee noted the replies which have been given for queries of Auditor **General's Report for the year 2012.**
  11. At the last meeting Committee reviewed the 2014 Internal Audit Plan, progress of the 2013 Internal Audit Plan and implementation of recommendations of the previous committee meetings and instructed to internal auditor to check Divisional progress quarterly and report to the Audit and Management Committee. Further Committee recommended requesting staff to the Internal Audit Division to strengthen it.

K.R. Uduwawala  
Chairman – Audit and Management Committee.

## **2. Activities of the Division of Radiation Protection**

### **2.1 Development of Regulatory Infrastructure**

#### **2.1.1 New Act for Atomic Energy Authority**

Approval of the Cabinet of Ministers has been granted to draft a new Act for Atomic Energy Authority on 22-06-2011 as the present Act was 44 years old and not consistent with the latest international requirements. The new Atomic Energy Act was drafted by a committee comprising Mrs. Dara Wijayatilake, Secretary, Ministry of Technology and Research, Mrs. Sriyangani Fernando, Legal Officer retired from Legal Draftsman's Department, Mr. Pasan Gunesena, the AEA Board Member, Mr. H.L.Anil Ranjith, Senior Deputy Director, Division of Radiation Protection and Regulation of AEA. The new draft Act contains provisions to meet latest international requirements on radiation protection, nuclear security, transport safety, safeguards and radioactive waste management. The drafting committee visited International Atomic Energy Agency (IAEA) in Vienna during 27-30 August 2013 to discuss the draft Bill with IAEA Legal Officers of the IAEA Legal Division. The draft was prepared with the suggestions and amendments agreed with the IAEA during the discussion. The final draft was submitted to the Legal Draftsman on 4<sup>th</sup> November 2013 for approval. After obtaining the approval of Legal Draftsman, the draft Bill will be submitted to Attorney General's Department for approval. It is expected to submit the Bill to Parliament before end of June 2014.

#### **2.1.2 Code of Practice on Industrial Radiography**

Final version of the code of practice on Safety of Industrial Radiography was prepared by the Division of Radiation Protection and it is expected to obtain Board approval during first quarter of 2014 for the draft and to print 500 copies to distribute to license holders to strengthen the knowledge of regulatory requirements and individual safety of workers.

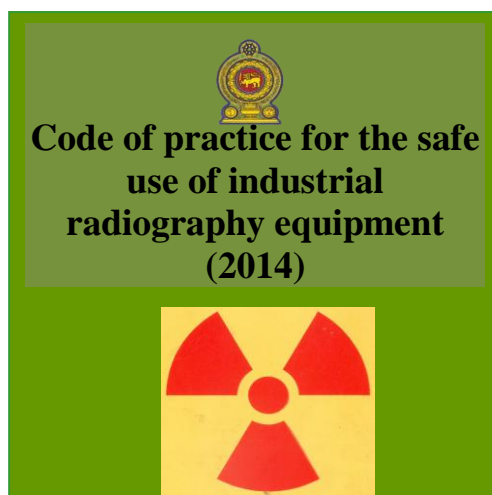


Fig.2.1: Front page of the Code of Practice

### **2.1.3 National Plan of Radiological Emergency Preparedness and Response**

A national plan on Radiological Emergency Response and Planning (RERP) was drafted by the AEA. This plan was discussed with the officers of the Disaster Management Centre. A oneday workshop was held with the stakeholders to review the draft. The final draft of the Rad Plan prepared incorporating comments of the stakeholders were sent to all the stakeholders to get their approval for the draft.

## **2.2 Regulatory Activities**

### **2.2.1 Radiological Emergency Response Programme**

- The Atomic Energy Authority in collaboration with the Disaster Management Centre established Nuclear Disaster Early Warning Systems (NDEWS) in Sri Lanka. The on-line Radiation Detectors of the system installed in the coastal belt of Sri Lanka stretching from West to North facing the State of Tamilnadu of India and Trincomalee in Eastern coast. These Detectors have been installed at SL Navy bases in Kalpitiya, Talai Mannar, Delft, Kankasanthurai, Trincomalee, Colombo and Galle. These monitoring stations will provide data on environmental radiation levels at these locations so that any increase of radiation levels can be easily detected to take early action to protect public.
- Environmental radiation levels were measured at 100 locations covering Jaffna, Mannar, Chilaw, Puttalam, Galle, Hambantota, Monaragala, Batticaloa, Trincomalee, Ratnapura, Ampara, Gampaha and Kalutara District, as establishment of radiation base-line data is one of the main requirements for effective radiological response programme.
- 07 Emergency Response Groups in different subject areas were appointed to initiate effective response activities in case of a Radiological Emergency. In house training programmes were conducted for the above teams on 30<sup>th</sup> January 2013.
- A programme on Medical Response in Radiological Emergency was initiated jointly with the Ministry of Health on 18<sup>th</sup> September 2013. A planning committee was appointed for the development of the programme.
- 2 programmes for public awareness on radiological and nuclear emergency were conducted. One programme conducted in collaboration with the Disaster Management Center for the government officers at Putlam District on 20<sup>th</sup> April 2013 and one programme was conducted in parallel to the “Dayata Kirula” Exhibition in Ampara in 2013.

### 2.2.2 Implementation of Physical Protection Programme

Following activities were carried out under Global Threat Reduction Initiative (GTRI) project funded by the US Department of Energy.

#### *Securing Radiation Sources*

- A “Response Force Training” was conducted from 26-30 August 2013 for 30 participant from Police, STF and staff of facilities where Physical Protection was provided with the assistance of US GTRI project.
- A training course was conducted with the assistance of two instructors provided by GTRI project on 13 December 2013 for 30 participant Police, and technical persons who are from the stake holder organization of GTRI on the use of Rad Eye Personal Radiation Detector to be destributed to stakes holders .

#### **Securing Orphan Sources:**

A source search programme was conducted at Field Crop Research and Development Institute (FCRDI) of Department of Agriculture in collaboration with two US instructors. Training was given to AEA radiation protection staff officers on use of survey and search instrument on the first day and a source search operation was conducted in next two days. Two Radiation Moisture Gauges were found. This activity was conducted from 9-12 December 2013.



Fig. 2.2: Searching exercise of orphan sources

### 2.2.3 Assessments of facilities / Authorizations granted

No. of inspection conducted	- 138
No. of licenses issued	- 186

No. of Import / Export authorizations issued	- 522
No of Irradiation rooms approved	- 56

#### **2.2.4 Training and Awareness Programmmes**

- Conducted a National Training Course on Radiation Protection and Quality Assurance in Diagnostic and Interventional Radiology for Radiographers working in private hospitals from 10-13<sup>th</sup> September 2013. There were 38 participants.
- Conducted a Training course on Safe Transport of Radioactive Materials for transporters of radioactive materials from 30-31 July 2013. There were 18 participants.
- An awareness programme was conducted for Radiation workers at Colombo Dockyard Ltd on Radiation protection on 20.07.2013.
- The Training programme for Operators of industrial Irradiation Facilities was conducted for 7 individuals (officers and technicians) recruited for MGIF, Biyagama from 23.3.2013 to 06.04.2013. The operator qualifying examination was held for the above personnel on 24.06 2013.

#### **2.2.5 Management of Radiation Sources**

- At the request of Sri Lanka Custom, a consignment of old auto mobile was checked for radioactive contamination and necessary approval was given to re export the consignment as it was found to be radioactive.
- Shipment of Radioactive sources imported from Schlumberger oilfield Eastern Ltd, was stored temporarily at AEA storage facility until the sources were transported to Manner for oil extraction work. AEA charged for this service.
- Spent Radiation sources from the following institutes were brought to AEA and stored at Central source Storage Facility of AEA;
  - Prema Ceylon Ltd., Colombo. two Cs-137 sources used for gauges
  - Reverina hotel, Beruwala; 1 Lighting Arrestor with Am-241 source.
  - Ceylon Tobacco Company; 11 Sr-90 sources used for gauges.
- Arrangements were made to return radioactive sources used for well logging activity at Mannar oil wells to India .This involved inspection of sourcrs and approval for export.
- Three old Co-60 sources were sent to BRIT, India for safe disposal. Total expenses for this activity was borne by the US GTRI project.



Fig. 2.3: Transferring sources for secure storage at AEA Central spent source Storage Facility

### 2.2.6 Other activities

- The staff officers of Radiation Protection Division attended Dayata Kirula Exhibition which was held from 4<sup>th</sup> February to 10<sup>th</sup> February 2013.
- An inspection was conducted at rare earth extraction site of Redwood project (project for rare earth extraction) at Gampola and recommendations were given to implement the Radiation Protection for workers and the environmental protection.
- At the request of International Atomic Energy Agency, Sub Regional Workshop on Nuclear Security was held in Sri Lanka.
- Inspections were carried out with US DOE Physical Protection specialists at the following places to find out progress of implementation of source security arrangements from the instruments provided by the US Government under Global Threat Reduction Initiative project and to assess the further assistance required for enhance the security for the sources.

Ansell Lanka Ltd; Biyagama, Cancer Institute; Maharagama, Tissue Bank, Colombo 07, Teaching Hospital, Karapitiya, General Hospital, Badulla, General Hospital, Kandy, General Hospital, Anuradhapura, Base Hospital, Thellipalai, Asiri Surgical Hospital, Colombo.

- Prepared a checklist for licensing and inspection of new irradiator located at Sri Lanka Gamma Centre, Biyagama.
- Lectures and examination for Radiation protection modul of NDT- Radiography level 2 training course was conducted .



- On the request of the Secretariat for Commonwealth Heads of Government Meeting 2013, Division of Radiation Protection organized and implemented the Nuclear Security measures for commonwealth executive meeting and all other events parallel to the main meeting. IAEA assisted to this programme in providing expert services, personnel training, equipment etc. The programme was held from 08/11/2013 to 18/11/2013. Fourty seven AEA officers participated in this programme.
- Radiation safety aspects were ensured during unloading and transport of Co-60 consignment imported from India to Sri Lanka Gamma Centre.
- An inspection was conducted at the request of Magestrate , Kesbewa Magistrate Court at a detergent manufacturing company at Piliyandala to find out the gas released from fire contained any radioactive material. AEA observation was given after the inspection.
- Two inspections were carried out on burnt containers located in a Jaela yard to find out possible radioactive contamination and reports were issued.
- Radiation Protection Division provided a service of a Radiation Protection Officer (RPO) from 03/07/2013 to 03/01/2014 to the Gamma Center, on the request of the Gamma Center at Biyagama. These services included the supervision of source transport, source loading, leak testing, radiation survey, personnel protection etc.

### 3. International Cooperation Division

The Atomic Energy Authority (AEA) functions as the national focal point to the International Atomic Energy Agency (IAEA) and coordinates preparation of National Project Concepts online using PCMF (Project Cycle Management Framework). Nine project concepts were submitted to the IAEA through the PCMF and during the IAEA General Conference in September 2013 five projects out of nine projects were selected and approved to be implemented during 2014/2015 biennium cycle. Those projects are in line with the Country Programme Framework (CPF) and national development planning documents such as Mahinda Chinthanaya Forward Vision. Followings are the five projects approved to implement for 2014 - 2015 TC cycle.

	<b>Project Title</b>	<b>Institute</b>
01	Strengthening radiation protection in diagnostic radiology, audit and promoting safe use of medical radiation in Sri Lanka	National Hospital of Sri Lanka, Ministry of health Sri Lanka
02	Establishment of National Centre for Nuclear Agriculture (NCNA)	Atomic Energy Authority of Sri Lanka
03	Establishment of National Centre for Marine Pollution Control	Marine Environment Protection Authority (MEPA)

04	Strengthening Nuclear Medicine procedures for radionuclide therapy to improve clinical outcome of cancer patients and chronic joint diseases	Nuclear Medicine Unit, Faculty of Medicine, University of Peradeniya
05	Technical support for smooth, safe and sustained operation of the First Government owned multipurpose Gamma Irradiation facility in Sri Lanka	Atomic Energy Authority of Sri Lanka

The AEA has updated data-bases containing information on areas of applications relevant to personnel trained in national research establishments, health-care facilities and industrial establishments to facilitate invitation of nominations and project concepts for IAEA programmes. The list was prepared, according to the field of activity of IAEA. During the period AEA has received 57 training opportunities from IAEA, RCARO and MEXT Programmes and 140 local scientists and researchers were trained under the above opportunities. The selected officials were trained at the institutions of excellence in the fields of industry, medicine, agriculture in Member States of the IAEA where radiation technology is used.

The Country Programme Framework (CPF) for 2014-2017 was finalized and signed during the General Conference 2013 as a sideline activity as the starting point for the TC programme process as the CPF 2009-2013 expired at the end of 2013. Within the frame of Technical Cooperation of IAEA, Member States and the Agency collaborate in preparing the CPF.

The PCMF web based tool was further utilized for submission of project concepts and TCPRIDE was used for project monitoring and to obtain information required for various purposes at AEA. The web based internet platform is widely used for the Technical Cooperation Programmes. IAEA Intouch internet platform is used for uploading of fellowship and scientific visit applications. IAEA encourages using this platform to upload applications of training, meeting and workshop etc.

### **3.1 Systematic implementation of the Technical Cooperation Projects**

IAEA approved eight National TC projects for 2012 – 2013, 15 Regional Cooperative Agreement (RCA) projects and Interregional projects and these projects were successfully implemented during the year 2013 by achieving nearly 100% succession at the end of the year.

Following workshops were organized and conducted by the Authority with the help of IAEA experts in the field of Technical Cooperation for all scientific staff of AEA to provide guidelines and other relevant knowledge for formulation of successful project concepts for future TC cycles.

1. Workshop to evaluate and monitor ongoing TC Activities, develop cooperation with National Institutions participating in IAEA TC Activities and also to develop bilateral cooperation with stakeholders and partners was held in IAEA in 11-13 March 2013

2. Workshop to create broader awareness among AEA Scientific Officers, Executive Officers and National Project Counterparts in the field of project planning was held in AEA in 23 - 27 September 2013

With the purpose of increasing of productivity of both IAEA National Projects and IAEA/RCA projects, Project Review Meetings were conducted in collaboration with Training & Evaluation Unit of AEA throughout the year 2013.

The Authority provided logistic support to Nuclear Medicine Unit, Faculty of Medicine, University of Peradeniya, Anti Malaria Campaign, Ceylon Electricity Board, Geological Survey & Mines Bureau and General Hospital, Jaffna to obtain Technical Cooperation support for TC projects. Especially the Authority was able to facilitate the procedures to obtain a Gamma Camera through the IAEA for Nuclear Medicine Unit of University of Peradeniya. Multipurpose Gamma Irradiation Facility (MGIF) was also commenced its operations as a fruitful IAEA Technical Cooperation Project implemented by AEA.

### **3.2 Hosting of IAEA Events in Sri Lanka**

The Authority hosted following five IAEA events in Sri Lanka during the year 2013.

1. RAS/9/064 - IAEA Regional Workshop on Occupational Radiation Protection in the Mining and Processing of Ores in Colombo, Sri Lanka from 05-08 February 2013.
2. IAEA Sub-Regional Meeting on Nuclear Security Information Exchange and Coordination, 14-16 May 2013, Colombo, Sri Lanka.
3. RAS/7/022 - IAEA/RCA Regional Training Course on Application of Stable Isotopes (Carbon – 13, Nitrogen - 15 and Oxygen - 18) and Trace Elements as Tracers of Biogeochemical Change in the Marine Environment, 21-30 November 2012, Colombo, Sri Lanka.
4. INT/2/013 - IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes using the Milestones Approach, Colombo, Sri Lanka, 21 to 23 October 2013.
5. RAS/7/021 - IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience, 09-13 December 2013, Colombo, Sri Lanka.

### **3.3. Coordination of IAEA Fellowships and Scientific Visits in Sri Lanka**

Three Nepal and Two Cambodian scientists who received IAEA fellowship from in the field of animal reproduction, visited at Medicine Department of Farm Animal Production & Health, Faculty of Veterinary Medicine & Animal Science University of Peradeniya through AEA.

### **3.4. Coordination of Bilateral Discussion with the IAEA Member States**

The AEA coordinates bilateral discussions with Russia, Pakistan and India to obtain technical assistance in order to develop nuclear technology in Sri Lanka.

#### Bilateral Discussion with Russia

As a result of the bilateral discussions had with higher officials of State Atomic Energy Cooperation “ROSATOM”, a Memorandum of Understanding (MOU) was signed during the visit of Hon’ble Minister of Technology & Research during his participation in the Ministerial Conference held in St Petersburg, Russia in 2013.

A meeting was held on the Ministry of Technology & Research with the presence of Hon’ble Minister and Secretary to the Ministry to discuss the preparation of action plan to gain the Technical Assistance from ROSATOM to develop peaceful utilization of the Atomic Energy Applications in Sri Lanka through the said MOU. The MOU is mainly focused on atomic energy infrastructure development through establishment of Nuclear Research Centre and a Research Reactor, exploration of Uranium deposits and management of radioactive wastes.

#### Bilateral Discussion with Pakistan

A Memorandum of Understanding (MOU) was drafted in cooperation with the Pakistan Atomic Energy Commission (PAEC) and main aspects of considering are non-destructive testing, radioisotopes applications in medicine, industry, marine pollution, agriculture, C-14 dating and human resource development.

## **4. Activities of the General Scientific Division (GSD)**

### **4.1 NUCLEAR INSTRUMENTATION PROGRAMME**

It is an essential pre- requisite to maintain nuclear instruments in proper operating condition, for the optimum utilization of nuclear technology, for socio economic development of the country. As such General Scientific Division (GSD) provides necessary services in maintaining nuclear instruments.

#### **4.1.1. Maintenance of Nuclear Electronic Equipments/Services**

- a. Maintenance Services: Regular preventive maintenance services, repair of nuclear instruments, performance tastings were carried out by the GSD. Number of nuclear / scientific instruments maintained was 18.
- b. The numbers of services in the field of IT and related areas provided for smooth functioning of activities of AEA using IT tools were **169**.

### c. Advice consultation work on development activities/services

Nuclear Instrumentation Expert Group of the GSD took the responsibility of installation, calibration and maintenance of Nuclear Disaster Early Warning Systems (NDEWS) installed in the country.

These have been installed to determine the environmental consequences due to trans-boundary radioactive dispersions due to nuclear accidents in neighboring countries. Data collected from these NDEWS will be used for emergency response planning and implementation to protect public from unwarranted radiation.

Two remote detector stations were installed at Galle and Trincomalee in 2013. Now total of 07 detector systems for NDEWS are available and regularly maintained. Regular calibrations & performance tests of NDEWS at all stations are being carried out.

Problem occurred with Central Station Saver and Hardware problem occurred at Remote Monitoring Stations was solved within a short time in order to continue monitoring of radiation doses throughout the year 2013.



Fig. 4.1 : Locations where NDEWS are installed

## 4.2 Development Activities

With the advancement of technology and non-availability of detailed technical information of instruments, it is not possible to repair modern equipment without the support of the suppliers / manufacturers. Since the sophisticated equipment cannot be repaired in component level and replacement of electronic circuit boards is costly, development of simple equipment and use of such equipment, when appropriate, would be much beneficial to developing countries.

GSD is involved in a project on designing low cost radiation measuring equipment. A prototype radiation monitor has been designed and fabricated. Performance tests of this instrument have been done. This has to be tested in the field conditions.

### **4.3 Secondary Standards Dosimetry Laboratory**

Establishment and maintenance of radiation metrology standards are essential for disseminating metrology standards for radiation measurements in areas such as radiation therapy, diagnostic radiology, & radiation protection of workers, general public and environment.

The Secondary Standard dosimetry laboratories in general provides link with International measurement systems to disseminate metrology standards for accurate measurements in areas mentioned above.

It is mandatory that every institution where radiation is used, should obtain personal monitoring service for occupational exposure control and dosimetry calibration services regularly, to calibrate their radiation monitoring devices / instruments, to ensure the radiation safety of the workplace/workers.

Maintenance of Secondary Standard Dosimetry Laboratory (SSDL) is essential for implementation of Radiation Protection Programme in the country, to ensure the radiation safety of workers, general public and the environment, to measure that accurate radiotherapy doses are delivered to cancer patients, and thereby obtain quality radiological images with minimum patient dose.

Considering the above facts, the Atomic energy Authority (AEA) has established a Secondary Standard Dosimetry Laboratory (SSDL) for provision of dosimetry calibration (Gamma radiation) services.

The SSDL possesses basic equipment, which have been calibrated against the International standard traceable to the primary standard at Bureau of the International Weight & Measure (BIPM) in France. These equipment are well maintained and the Quality Management System of SSDL has been established in compliance with ISO 17025 and implemented, in order to ensure the accuracy and traceability of results to international measurement system of units. Continual development of capabilities is necessary to adopt the current development in this filed. This laboratory has been accredited as per ISO 17025.



Fig.4.2 : SSDL for calibration of radiation monitoring instrument

## **SSDL Activities**

- Implementation of Quality Management system as per ISO 17025.
- Regular Maintenance of Reference and ancillary equipment and maintenance of reference radiation standards at SSDL.
- Protection level radiation dosimetry calibration services were provided to several private and government institutes in the year 2013. The number of radiation monitoring instruments calibrated was 70.
- 1100 TLDs were irradiated for calibration of TLD readers and quality assurance of Personal Monitoring Program for measurement of occupational exposures.
- 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. Equipment worth of Rs. 4.98 Million from International Atomic energy Agency (IAEA) has been received for development of dosimetry calibration facility to provide calibration services required for the country.
- Perform periodic/intermediate tests to verify the stability and accuracy of reference standards at SSDL.
- Continual improvement of Quality Management System of SSDL is being carried out.
- Inter-comparison exercise with reference transfer chamber of IAEA with AEA therapy level reference chambers was carried out to verify the calibration factor of the AEA reference chamber.
- Calibration of therapy level two set of electrometers with ion-chambers at Cancer Institute Maharagama and Cancer unit, Tellippalai Hospital, Jaffna were calibrated.
- SSDL participated at IAEA TLD postal Audit program for verification of reference radiation beam and traceability of results to international measurement system.

## **4.4. ICT Applications:**

1. Maintenance of the Website ([www.aea.gov.lk](http://www.aea.gov.lk)) and Local Area Network was carried out.
2. IT services (Email & internet services) provided to staff of the AEA are being maintained.
3. Maintenance of computer hardware and software is being carried out to enable the staff to use IT facilities for work efficiently.
4. Development of software package for better management of Personal Monitoring Service has initiated.

## **4.5. Personal Monitoring Service for monitoring of occupational exposures from ionizing radiation**

The main objective of this program is to ensure the radiation safety of radiation workers in the country.

The Atomic Energy Regulations make it mandatory, for all users of radioactive materials and irradiating apparatus, to be monitored by personal monitoring devices, approved by the Atomic Energy Authority. The General Scientific Division provides a personal monitoring service (PMS) to monitor occupational ionizing radiation exposures, to radiation workers island-wide, using thermoluminescent dosimeters (TLDs).

Number of Personnel monitored for occupational exposures to Ionizing Radiation Monthly/Bi- Monthly is 1100.

- Quality Management System (QMS) in compliance with ISO 17025 has been developed to obtain accreditation for this laboratory.
- Participated at an inter-comparison exercise, conducted by a laboratory abroad to verify the results. Results are within the acceptable limit.
- 5-day User Training and Service Training Program for TLD Readers were provided. Funds (Euro12,000) for this training program was obtained from IAEA.
- Software of TLD Reader model 4500 was upgraded including new firmware at this training program conducted by Service Engineer from the Thermo Fisher-Germany.
- Two one-day workshops on Management of PMS and technical aspects on TLDs used for PMS were conducted and 70 persons participated.

## **2.5 Environmental Radiation Monitoring Programmes in Sri Lanka - work carried out in 2013 by GSD**

### **4.6.1 Baseline Environmental Radioactivity Measurements**

Main objective of this program is management of radiation protection program in the country in a nuclear accident situation in a neighbouring country in order to protect public from unwarranted radiation exposures.

Environmental Radiation Monitoring for the establishment of Baseline data on environmental radiation is being carried out. Ambient dose rates and radioactive elements in soil and grass are measured to prepare a database.

This is a project carried out in collaboration with the Radiation Protection Division, General Scientific Division and Life Science Division. Dose rate measurements and collect soil/grass samples at 65 locations were completed in 2013. So far, out of the 400 locations (400 locations have been selected to represent the whole country) measurements of 254 have been completed. A software program has been developed to visualize the data on Sri Lanka Map.



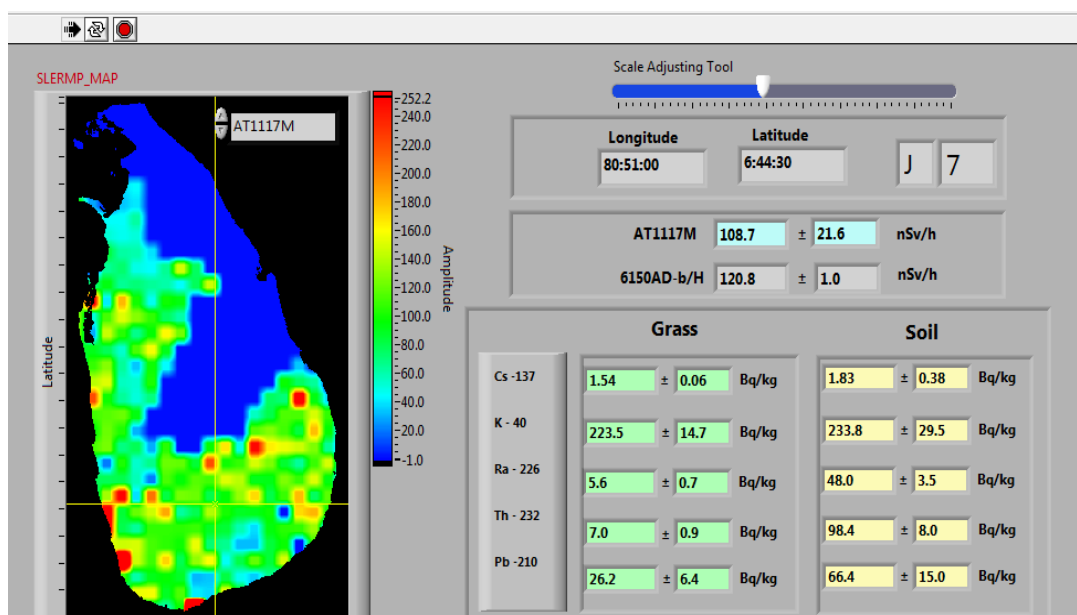


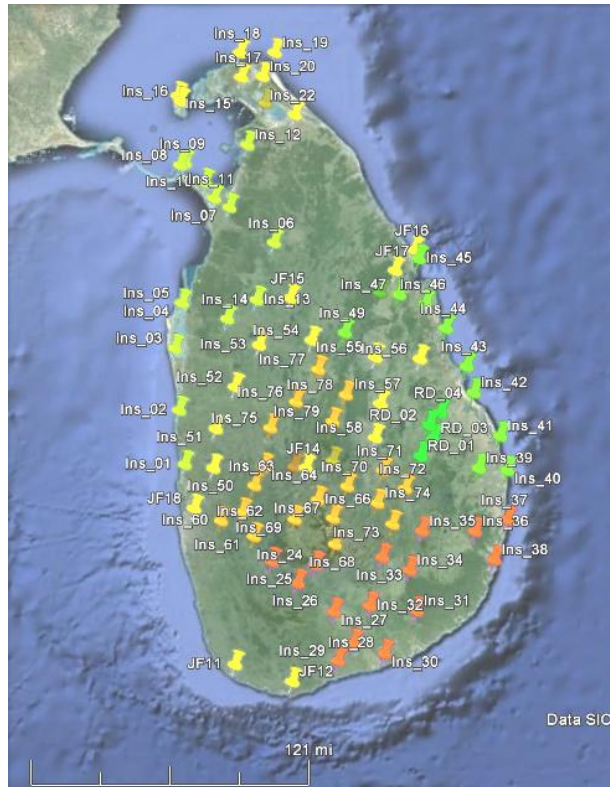
Fig.4.3: Shaded areas in the map show locations where radioactivity/ radiation levels were measured.

#### 4.6.2 In-situ Gamma Measurements

In-situ Gamma Measurements can be used to identify the radionuclide composition of ground contamination and to determine the surface concentration of the radionuclides deposited on the ground after any nuclear disaster. This is an appropriate method to obtain results faster than laboratory analysis. Baseline data and properly calibrated instrument system are needed for obtain accurate results.

Instrumentation support and expert knowledge are provided by GSD. Guidance of IAEA TECDOC -1092 to system calibration and to carry out in-situ gamma spectroscopy measurements in the field for baseline data collection is followed. Baseline data measurements of 98 locations have been completed and 38 locations were done in year 2013 to cover Kurunegala, Polonnaruwa, Kegall, Kandy, Badulla, Nuwara Eliya, Matale, Deniyaya and Mathugama areas.

Also GSD provides expert knowledge to analyze all the gamma spectrums and data.



**Fig.4.4 : 90 locations where In-situ measurements were completed**  
*(Year 2010- 13 Locations, Year 2011- 17 Locations, Year 2012- 30 Locations and Year 2013 – 30 Locations)*

#### 4.6.3 Radon Monitoring Programme in Sri Lanka

Several NORM areas with very high Thorium and Uranium concentrations have been identified in inland/coastal and offshore areas in Sri Lanka. Therefore, the investigation of Radon and Thorium concentration levels in these areas is very important to make arrangements for protection of general public living in such areas and mining workers who work in gem and graphite mines. Also a group of geophysicists in Sri Lanka is interested in carrying out a survey on variation of Radon concentrations near the hot water springs along the identified mini plate boundary fracture across the island.

Assistance has been obtained from the Nuclear Institute of Radiological Science (NIRS) and the University of Tokyo for implantation of Radon measuring programme in Sri Lanka. This programme is carried out in collaboration with the Institute of Fundamental studies (IFS). Under this project, first data set of Radon/Thoron obtained with CR39 track detectors (passive method) was published on international journal and another 50 set of CR39 track detectors were dispatched in same places with some improvements of detector placing method.

Another new program was started with IAEA for in-door Radon monitoring. Main objective of this program was to develop measurement protocols for national Radon strategies. It was decided to give Radon track detector set to each participating county (18 countries) of this project. Each county was requested to present their plans with proposed locations to carry out in-door Radon

measurements with Radon track detectors. Protocol and proposed locations were finalized to start the in-door Radon survey under the above program in 2014 with 50 sets of Solid State Alpha Track detectors.

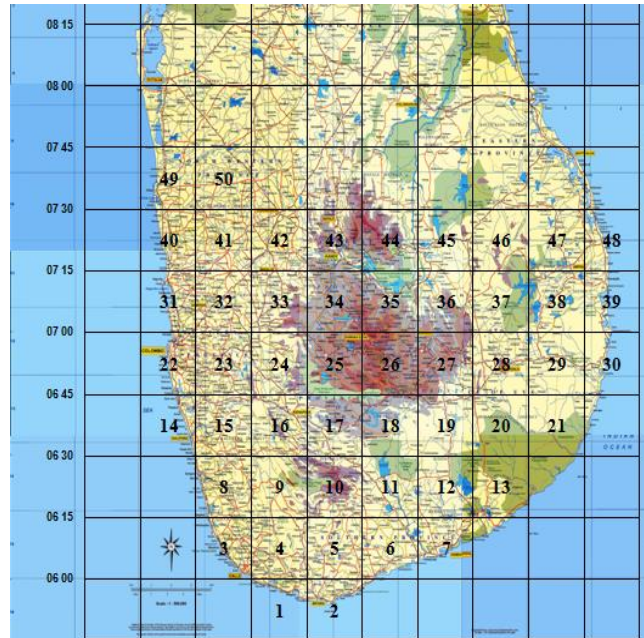


Fig. 4.5 : Proposed locations to carry out in-door Radon measurements with Radon track detectors

## 5. Non Destructive Testing (NDT)

The Non Destructive Testing Section launches its activities in three directions.

1. NDT Manpower Development Programme
2. Provision of NDT Services
3. Development activities.

### • NDT Manpower Development Programme

The NDT Section of AEA annually conducts training programmes on NDT technology. As a result of this, a number 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 as the certificates issued by the AEA has international recognition. The training courses are conducted according to a syllabus approved by the IAEA and the International Standards Organization (ISO).

**211** personnel participated in NDT training courses and workshops during 2013 and an income of **Rs 3,073,090.00** (Excluding Tax) was generated from the same.

Year	No. of Participants
2006	101
2007	95
2008	107
2009	168
2010	186
2011	249
2012	210
2013	211



Fig. 5.1 : Number of Participants who participated in Training Courses

- **Man Power Development (Training NDT personnel)**

The NDT section of the AEA conducts training courses for those who wish to pursue a carrier in NDT field.

(Minimum educational qualification required to follow these courses are pass in the A/L science stream)

These courses are conducted according to a syllabus recognized by the IAEA and ISO. As such those who are successful at the exams held at the end of the courses can apply for lucrative jobs here and abroad.

- **Provision of NDT Services:**

The NDT Section of AEA provides NDT inspection services to industry in order to detect defects in machinery and metallic components to ensure industrial safety and to improve industrial productivity.

AEA provided **143** NDT inspection services to industries in 2013 and an income of **Rs 4,801,580.18** (Excluding Tax) was generated from the same.

Year	No. of Inspections
2006	70
2007	84
2008	89
2009	100
2010	124
2011	114
2012	130
2013	143



**Fig.5.2:** Total income generated from the NDT programme for 2013 is Rs. 7,874,670.18 (Excluding Tax).

- **Development activities:**

- a.) **Establishment of CBNDT**

The objective of establishing Certification Body for qualification and certification of Non-destructive Testing personnel (CBNDT) is the development of policies and principles regarding the contents and functioning of a certification system for qualification and certification of NDT personnel.

Accreditation process of the 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” was completed.





Fig. 5.3 : Chairman receiving the Accreditation Certificate from the Hon'ble Minister

### **b.) Establishment of a National Centre for NDT (NCNDT)**

The main objective of the NCNDT project is to develop the present NDT Section of the AEA to a National Centre under the AEA in a separate location in 2014. This Centre is planned to have well equipped accredited laboratories as per internationally accepted standards providing all kind of Non Destructive, Semi-Destructive and Destructive Testing services along with related Mechanical and Chemical Testing in Civil Engineering and Industrial sector which can be competitive with the regional NDT service providers. Hence it will increase the incorporation of NDT methods including concrete testing techniques into the production process and create skilled professional in the field as per international standards with a view to enhance the quality and productivity in industrial sector in the country.

NCNDT will coordinate with Building Regulators, Industry Regulators, Insurance Providers, Overseas Employment Agencies, Welding Specialists, NDT Society of Sri Lanka, and International Committee for NDT and etc. Final intention of the project will be to reach break-even within a few years and to become a non-loss making entity with pride and commitment.



Fig.5.4: NDT Centre is under construction

Some of the techniques we are planning to establish and provide services through this Centre are common NDT Methods (RT,UT,MT,PT and ET), Leak Testing, Vibration Monitoring, Acoustic Emission, Stress and Strain Gauging, Thermography, Digital Radiography, Tomography and Phased array UT, Visual Testing, Welder Qualification Test, Concrete Testing, Mechanical and Chemical testing related with NDT. In addition training, qualification and certification of NDT personnel in all the above techniques is another objective of this Centre. All these techniques and activities are to be accredited as per international acceptable Standards.

The construction works of main laboratory building of NCNDT (Block A) is progressing. It is planned to complete the constructions by March 2014 and to initiate commercial operation of this NCNDT by 03<sup>rd</sup> quarter of 2014.

## **6. Radiation Processing Programme**

### **Research & Development Work of the Radiation Processing in 2013**

#### **6.1 Project No. 1**

**Title of Project:** “Supporting Radiation Processing of Natural Polymers for Agricultural and environmental remediation”, RAS/8/109

The objective of the Project was to produce radiation processed environmentally friendly products for agricultural, environmental & industrial applications. Research Team was consisted with Atomic Energy Authority, Horticultural Research and Development Institute (HORDI), Department of Agriculture, Gannoruwa, Peradeniya, Rice Research and Development Institute (RRDI), Batalagoda, Ibbagamuwa and Regional Rice Research and Development Centre (RRRDC), Bombuwela

Following environmental friendly products were developed by using natural polymers & radiation modification techniques.

1. Plant growth promoter/elicitor Product for Agriculture Applications by using Oligo-Chitosan Derivatives.
2. Fungicide Product for Agriculture Applications by using Low Molecular Weight Chitosan Derivatives.
3. Combine Product for Agriculture Applications by using above developed Fungicides & Plant growth promoter/elicitor.
4. Low molecular weight Iodo Chitosan derived complex product for Agriculture Applications with powerful fungicidal and bactericidal effect. (This is an alternative product for the commonly used similar products.)

Followings were the milestones during the development of new products.

### For the Period of Year 2013

1. AEA developed two new products using Chitosan derivatives named as CHITO POWER-1 and CHITO POWER-2.
2. CHITO POWER-1 is a combine product selected Low molecular weight and Oligomer range Chitosan derivatives. This product has a Growth promoter/Elicitor properties with low fungicidal property.
3. CHITO POWER-2 is an Iodo Complex of Chitosan derivative product. This product has a Powerful fungicidal effect.
4. This product combination was introduced to field trials as a single package named CHITO POWER.
5. A MOU was signed in this regard, **430** liters of new CHITO POWER-2 product was issued to Dragon Fruit Grower's Association and continued field trials on infected Dragon Fruit Fields

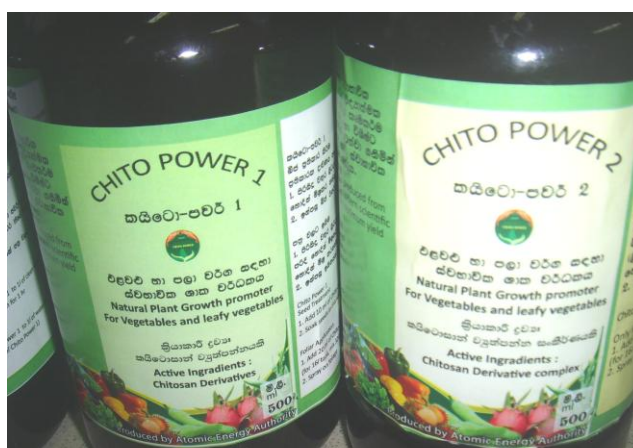


Fig. 6.1: Chito Power - a product developed by AEA

6. New product was used to carry out further studies in the field of vegetables such as tomato, capsicum, chillies, bitter gourd, vegetable leaves such as gotukola, mukunuwenna.
7. Results of the field trials with vegetables such as tomato, capsicum, chillies, bitter grout and vegetable leaves such as gotukola, mukunuwenna confirmed that the new product has similar results as DOA recommended commonly used products.
8. New product was used to carry out Research on seeds planting and Plant budding with Jack Fruit varieties and Durian fruit.
9. Plant budding effectiveness of Father lone variety of Jack Fruit was shown very low percentage (40%) with commonly used procedure and after applying with new product shows more than 80% successful result.



10. Based on all above successful results, Research Team conducted a Field Day Programme in HORDI, Department of Agriculture, Gannoruwa on 6<sup>th</sup> of September 2013 to introduce the products to end users including organic farmers and agro product companies.
11. This new product was presented to the “Sahasak Nimevum Exhibition & Competition” held at BMICH on 30<sup>th</sup> of September 2013, organized by the Sri Lanka Inventor’s Commission under the Ministry of Technology and Research.
12. Certificates were awarded to the Research Team on 27<sup>th</sup> of December 2013 at Sri Lanka Inventor’s Commission premises.
13. This product was presented to the “Technology Market Place- 2013 Exhibition & Competition” held at BMICH on 14<sup>th</sup> to 15<sup>th</sup> of December 2013, organized by the Ministry of Technology and Research.



Fig. 6.2 : At Technology Market Place -2013 Exhibition

## 6.2 Project No. 2

**Title of Project:** Project of “Supporting Radiation Processing for the Development of Advanced Grafted Materials for Industrial Application and Environmental Preservation”. (RAS/1014) {This is an extension of previous project, RAS/8/109}

The objective of the project is to produce radiation processed green products for agricultural, environmental & industrial applications.

Research Team consisted with Atomic Energy Authority, Department of Chemistry, Faculty of Applied Sciences, University of Sri Jayewardenepura, Department of Agriculture and Plantation Engineering, hFaculty of Engineering Technology, Open University of Sri Lanka, Horticultural Research and Development Institute (HORDI), Department of Agriculture, Gannoruwa, Peradeniya, Rice Research and Development Institute (RRDI), Department of Agriculture, Batalagoda, Ibbagamuwa and Field Crop Research and Development Institute (FCRDI), Department of Agriculture, Mahailuppallama

### **Achieved Milestones of this newly started project:**

#### **Received an IAEA expert mission:**

- Prof. Olgun Guven, Department of Chemistry, Hacettepe University, Turkey visited the Atomic Energy Authority, Sri Lanka as an International Atomic Energy Agency (IAEA) expert during the period of 09<sup>th</sup> - 13<sup>th</sup> December 2013. During his mission Prof. Guven discussed with the Research Team the issues related to research and development and methodologies of Polymer grafting including Super Water absorbents
- Prof. Guven conducted One day awareness programme on “Radiation Processing for Development of Advanced Grafted Materials for Industrial Applications and Environmental Preservation on 12<sup>th</sup> December 2013 at AEA. 31 participants from universities, research institutions, agriculture institutions and Private companies participated in the programme.
- Prof. Guven visited the Gamma Center at Biyagama

### **6.3 Establishment of Multi-purpose Gamma Irradiation Facility (MGIF)**

It was the concept originated from the Atomic Energy Authority scientists to establish a Multipurpose Gamma Irradiation Facility (MGIF) in Sri Lanka. Technical support and the expert advice were obtained from the International Atomic Energy Agency (IAEA) for the establishment of MGIF. The scientists of the Atomic Energy Authority carried out a market survey and developed a business plan with the help of the experts of the IAEA and submitted a project proposal to the Government of Sri Lanka for approval. The Ministry of Technology and Research took the step forward for the civil construction of MGIF. The project was successfully completed by the Ministry of Technology & Research by the end of 2013. The facility will be starting its commercial operations in January 2014 with an initial Co-60 activity of 250 kCi under the name of **Sri Lanka Gamma Center (SLGC)**. The designed maximum activity is 3000 kCi and it will be upgraded for the maximum strength with the demand of the customers. Sri Lankan government has invested nearly Rs. 760 Million for the establishment of facility. The Sri Lanka Gamma Centre is located inside the Free Trade Zone in Biyagama. It is operated by the Atomic Energy Authority.

International Atomic Energy Agency (IAEA) provided number of laboratory equipment, expert assistance and training of staff to develop the necessary human resources for the facility with an estimated cost of Rs. 30 Million and further Rs. 25 Million worth of assistance will be available for the year 2014 & 2015 under IAEA Technical Cooperation Programme by means of experts and training. Recruitment of staff for the facility was made by the Atomic Energy Authority with the aim of having skillful staff in order to provide uninterrupted service to the customers.

The SLGC is important for the country in view of application of gamma radiation for variety of important uses such as medical products sterilization, microbial disinfestations of food products and spices, radiation preservation of food and development of new industrial materials.

This facility will not only assist small and medium enterprises but foreign investors also to invest in Sri Lanka to start industries to produce medical supplies such as syringes, catheters, sterile dressing etc. that require gamma sterilization for export market. Gamma irradiation is a value addition to the medical products. this facility will be beneficial to country for saving foreign exchange.

It is important to note that this facility has been designed for research and development purposes for scientists of Atomic Energy Authority, national universities and other government and private research institutions. Development of innovative products in health care, food packing and agricultural sectors through R&D using radiation will provide economic benefits to the country.

## **7. Life Sciences Division (LSD)**

LSD is mainly responsible for establishing nuclear and associated analytical facilities at the Atomic Energy Authority 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 import & export sector, industrial sector, research and academic institutes through the utilization of nuclear and associated analytical methodologies. 3839 milk food samples were analyzed during 2013 and issued analytical reports to customers. Through this activity quality of milk food imported to the country is tested for possible radioactive contamination assuring the safety of consumers. An income of Rs. 15.8 Million was generated by providing this analytical service. 1400 frozen fish and canned fish samples were analyzed from imported consignments during 2013 and issued analytical reports to customers/importers. Through this activity quality of frozen fish and canned fish imported to the country is tested for possible radioactive contamination assuring the safety of consumers while generating an income of Rs 12.4 Million. 1673 Tea and other samples were analyzed during 2013 and issued analytical reports to exporters generating an income of Rs 6.7 Million. The income generated by the LSD is almost 70% of the total income generated by the AEA in 2013. 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. The LSD was able to increase its scientific staff to 12 in 2013.

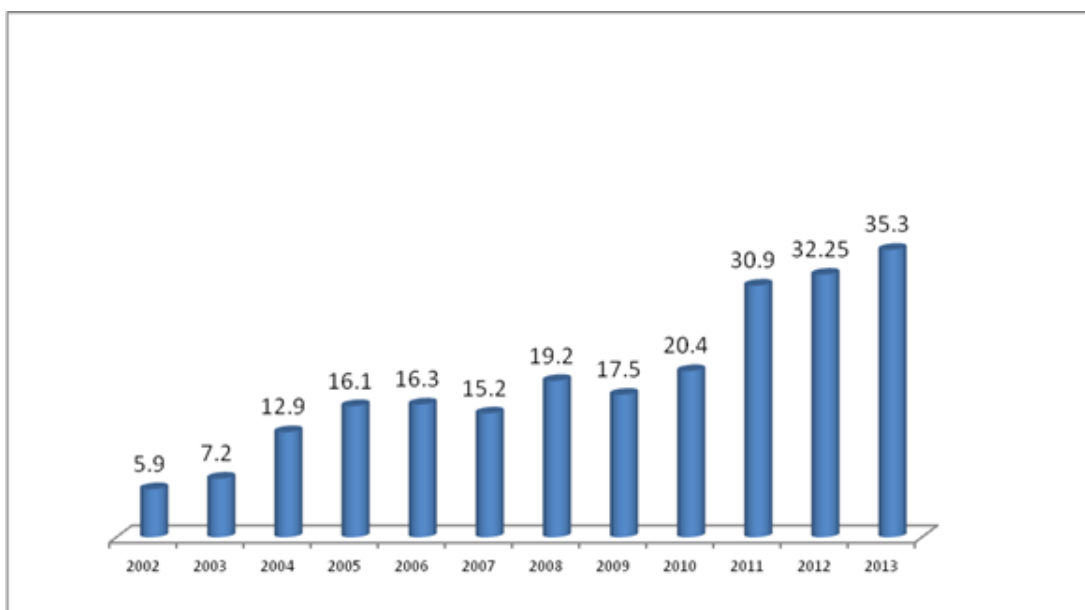


Fig.7.1 : Income generated from Nuclear Analytical Services (2002-2013)

## 7.1 Analytical Services by Gamma spectrometry

LSD has provided analytical services for import and export sector, local industries and R&D institutes testing more than 7000 samples in year 2013. 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 2013 was Rs 35 million. The number of samples analyzed and income generated during the past ten years are given in the graph below.



Fig. 7.2 : Gamma Spectrometry Laboratory

## 7.2 Research and Development activities using Gamma spectrometry

- a) **Monitoring of Environmental Radioactivity levels** was continued in collaboration with other Divisions of the AEA. The purpose of this activity is to establish the national baseline levels for radioactivity present in the environment and to prepare a radioactivity map for Sri Lanka.

Altogether, 98 samples of soil and vegetation collected from different locations in the country have been analyzed for the existing radionuclides in the samples.

b) **Marine Environmental Monitoring Programme** for possible radioactivity contamination after Fukushima Nuclear Power Plant. Sri Lanka has been able to establish its marine radioactivity data base successfully with the technical support provided by IAEA through the implementation of the regional project RAS/7/021 “Marine benchmark study on the possible impact of the Fukushima radioactive releases in the Asia-Pacific Region”. Under the leadership of the National Project Coordinator (NPC) assigned by the Atomic Energy Authority (AEA) of Sri Lanka, a dedicated National Project Team (NPT) was formed in Nov 2011 to achieve the objectives of the above project. An expert mission was arranged by the IAEA to train the NPT in sampling methodologies in Feb 2012 and six NPT members were able to receive necessary training through the regional training courses(RTC)organized by IAEA. With the inputs of IAEA and the local counterpart institutes, the AEA has been able to conduct a successful study in the marine environment to check whether there was any direct impact on the marine waters, sea food and sediments due to the radioactive releases from the Fukushima nuclear power plant accident took place in Japan in March 2011. AEA was able convinced the general public that there had not been any direct impact on its marine environment due to radioactive releases of the Fukushima accident.

However, in parallel, the AEA launched a monitoring of imported fresh fish and canned fish to Sri Lanka in order to assure the quality of such food. Although there were number of canned fish contaminated with cesium 137 and 134, the level of contamination was found to be below the permissible levels stipulated by Sri Lankan government.

The fresh fish samples collected from the local catch have also been analyzed for possible contamination with  $^{137}\text{Cs}$  and  $^{134}\text{Cs}$  during the last two year period and it was revealed that none of the samples was contaminated.

Over forty surface sediment samples and fourteen sea water samples( each >1000 L) and several biota samples were collected from the sea at locations near *Delft*, *Nainativ*, *Poonerin*, *Mannar*, *Kalpitiya*, *Negombo*, *Mt.Lavinia*, *Beruwala*, *Mirissa*, *Kirinda*, *Arugambe*, *Pasekuddah* and *Trincomalee* during Feb- 2012-Oct 2013(Fig.1).

The existing levels of natural and artificial radioactivity concentrations of  $^{40}\text{K}$ ,  $^{226}\text{Ra}$ ,  $^{232}\text{Th}$ ,  $^{210}\text{Pb}$ ,  $^{137}\text{Cs}$  and  $^{134}\text{Cs}$  in marine coastal sediment and  $^{137}\text{Cs}$  and  $^{134}\text{Cs}$  in seawater collected from those selected locations were measured by high-resolution gamma spectrometry technique at the Nuclear Analytical Laboratory of the Atomic Energy Authority.

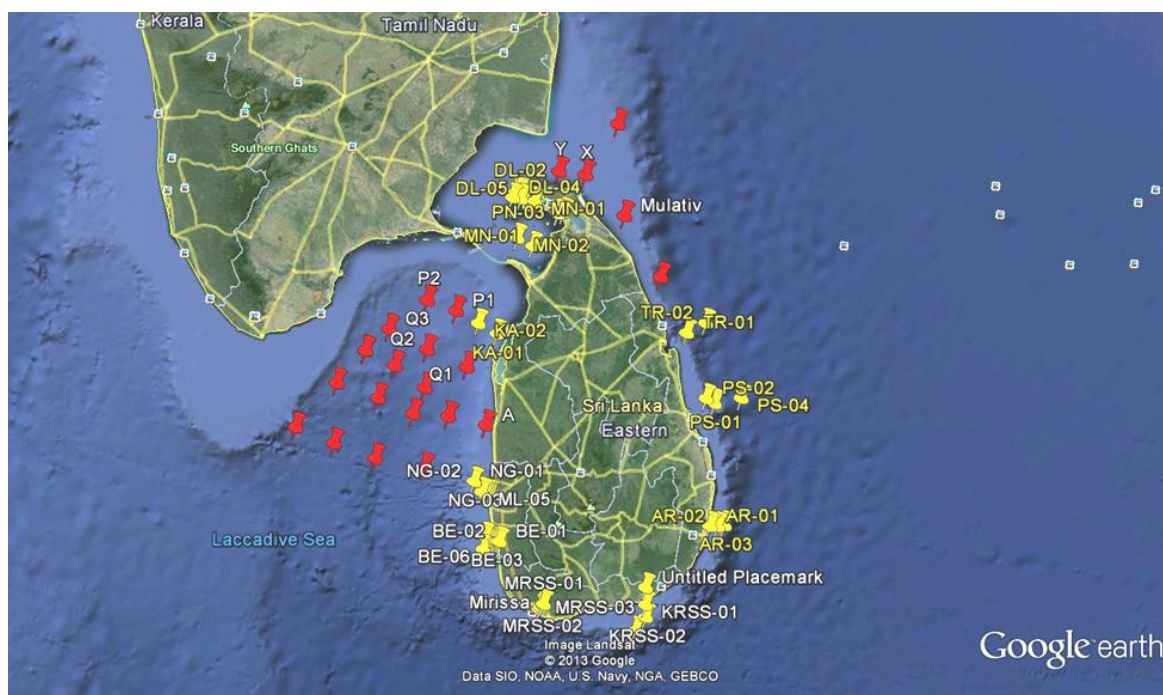


Fig.7.3: Map showing sampling locations (Key; yellow-completed, Red to be done)

**c) Soil erosion measurement project; RAS/5055 -‘Improving Soil Fertility, Land Productivity and Land Degradation Mitigation’**

This project is being implemented in collaboration with Natural Resources Management Centre, Department of Agriculture to assess the erosion status of selected landscapes in Central Highland of Sri Lanka.

The gamma spectrometry laboratory has contributed to the project IAEA/RAS-5055 by analyzing soil samples collected from study areas in 2013. A Case study has been conducted in Merivilla sub catchment, Dolosbage in the Mid country Wet Zone of Sri Lanka. Samples have been analyzed for  $^{137}\text{Cs}$  and  $^{210}\text{Pb}$  at the Atomic Energy Authority. Soil organic carbon, organic matter content, soil nutrients and bulk density were analyzed by the Department of Agriculture. Preparation of base maps and analysis of soil parameters for the Dolosbage site has been done by Natural Resources Management Centre. Under this programme, 106 samples have been collected, 84 samples have been processed, and 71 have been analyzed for fallout radionuclide Cs-137 and Pb-210.



## THE LOCATION MAP OF STUDY AREA - MIRIWILA ESTATE- DOLOSBAGE

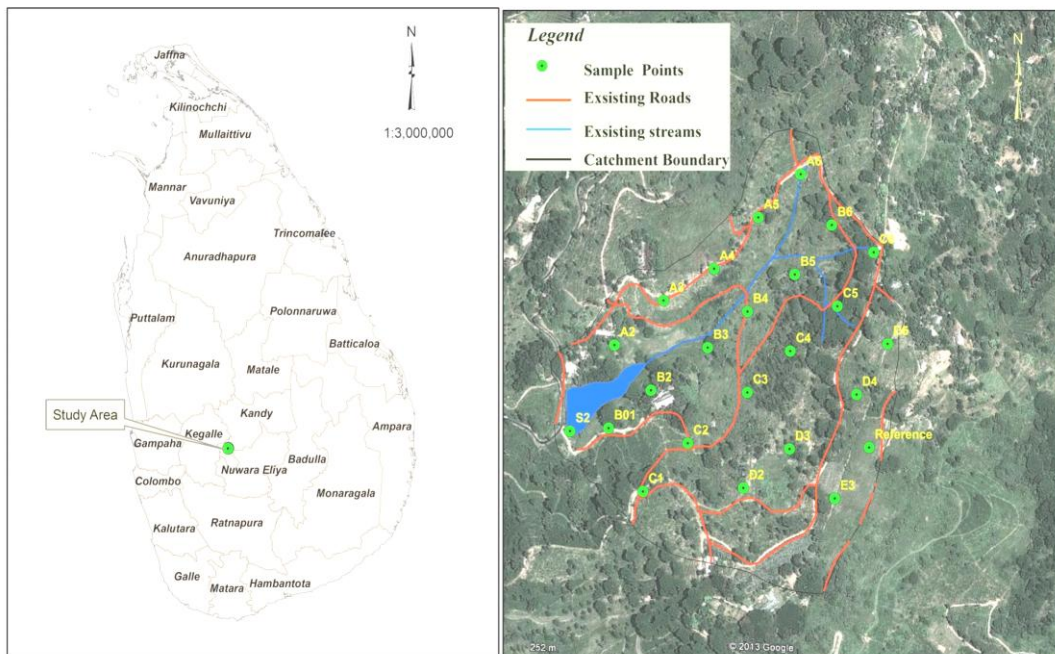


Fig. 7.5: Soil sampling at Merivilla sub catchment, Dolosbage

**d) Consumer protection programme:** Life Sciences Division has analyzed 41 number of milk based products and fish samples for existing levels of radioactivity by using randomly collected samples from the consumer market. Although, a regular testing programme is conducted for monitoring such food items imported to the country, the random sampling is continued in order to assure the public safety.

e) In addition to the above contribution, a total of 30 samples have been analyzed for Biodosimetry project of Faculty of Medicine, University of Kelaniya, Gem samples & Meteorite samples received from the Department of Geology, University of Peradeniya,

samples received from emergency preparedness programme & Multipurpose Gamma Irradiation Facility (MGIF) for radiation protection purpose, and samples for Proficiency Testing(PT) & Laboratory Inter-comparison Testing ( QA/QC programme)

### 7.3. 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. New sampling location was established at Meteorological station in Katugastota to monitor air pollution levels in Kandy area. Sampling is done twice a week and 71 (pairs) of Air Particulate Matter (APM) were collected in 2013 from Kandy and analyzed by using IBA/XRF techniques in USA for elemental concentrations. Data analysis and interpretation is being done based on statistical analysis. The finding will be disseminated to relevant authorities for further improvement of the air quality in Kandy area.



Fig.7.6: GENT air sampler and Stack filter unit located in the sampling site

- 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 food origin 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. Traceability systems play a key role in assuring food safety.

The intention of this project is to build the technical capacity in the member states (MS) so that MS will be able to implement traceability systems based on nuclear techniques. This will be achieved by developing systems for one or two products



(Rice & Honey in the beginning), these systems can then be used as templates for future application to other commodities such as Tea, Spices etc. Analytical techniques that enable the provenance of food to be determined provide an independent means of verifying “paper” traceability systems and also help to prove authenticity, to combat fraudulent practices, and to control adulteration, which are important issues for economic, religious or cultural reasons. National Project Team (NPT) was formed and actively participated in the project from its inception. One NPT member participated in the RTC held in Malaysia 28<sup>th</sup> January-08<sup>th</sup> February 2013. Rice, Paddy soils and water samples were collected from several locations where rice production is the main livelihood. Rice and soil Samples were prepared for trace element analysis and Stable Isotope (SI) analysis. Rice samples were analysed for SI at the IAEA Seibursdorf laboratory in Vienna as there is no analytical facility in Sri Lanka for necessary stable isotope analysis.

The programme will be extended to Tea as it is among major export item and there are fraudulent practices.

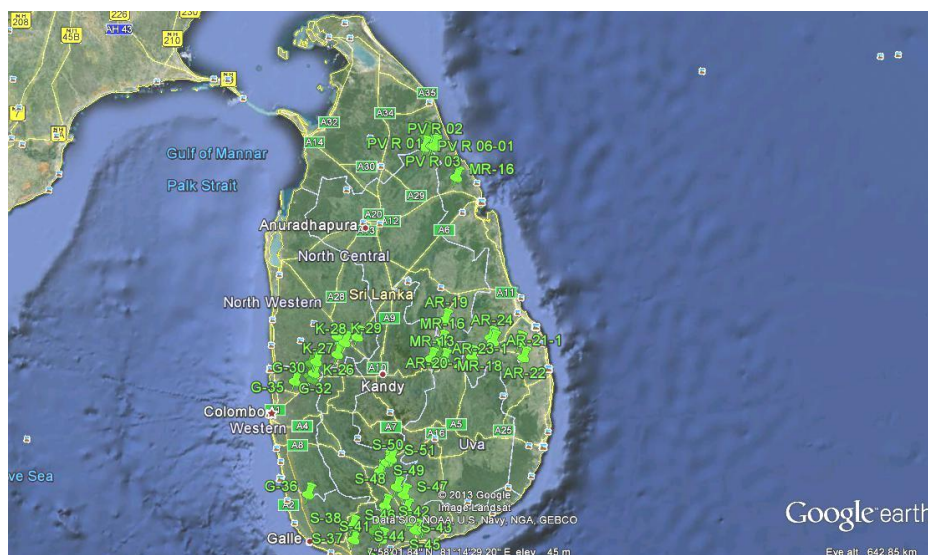


Fig. 7.7: Sampling locations for Food Authentication Programme

## 7.4 QA/QC Program of LSD

### ISO Accredited Laboratory

Low Level Counting Laboratory (LLC) of LSD is the only accredited testing laboratory operating in conformity with ISO/IEC 17025:2005 international Standards in Sri Lanka for radioactivity measurements.

The LSD is in the process of accrediting its analytical laboratories and further strengthening of the Quality System through the continuous participation in QA/QC programmes conducted locally as well as internationally. The laboratories are participating in internal and external quality audits, regular assessments conducted by the Sri Lanka Accreditation Board (SLAB), and proficiency testing (PT) exercises conducted by IAEA for XRF and gamma spectrometry for verification of result. The LSD has demonstrated

both the technical competency and management system requirements necessary to consistently deliver technically valid test results through the participation in Proficiency Testing programmes for XRF and gamma spectrometry conducted by IAEA.

The Sri Lanka Accreditation Board (SLAB) has extended the scope of Accreditation for LLC Lab with effect from 27<sup>th</sup> Dec 2011 till 27<sup>th</sup> Dec 2012 based on performance of the laboratory. New scope of accreditation has been extended to “Performing Nuclear Analytical Testing for Product categories such as soil / sediments, water, milk power, vegetative samples (Tea, Coconut and plant seeds) and other metrics (Fish, Processed Food Items, Pharmaceuticals, Mineral Sands etc).

Surveillance of the Quality System of LLC lab was done during 19<sup>th</sup> Nov. 2012 and SLAB has recommended to renew the accreditation granted to the laboratory, once the corrective action has been completed for non-conformities raised from the surveillance.

Booklet on QA/QC for Radioactivity measurement was prepared and published to identify the quality policy, accreditation, Regulatory Authority for consumer Protection etc.

A regional training workshop on Quality Management System was organized in collaboration with IAEA and conducted during 09-13<sup>th</sup> Dec 2013 in Colombo, Sri Lanka. A number of 15 foreign participants and 11 local participants were able to enhance their knowledge and experience in the subject matter through this programme.

## **7.5 Establishment of Radiochemical Analysis and Alpha Spectrometry**

The establishment of radiochemical separation techniques for alpha spectrometry has been completed using limited resources available. Radiochemical separation procedures for U-238, U-235, U-234, Th-232, Th-230, Th-228 and Po-210 have been used for environmental sample analysis. Only a single detector is available for alpha spectrometry at present and a plan has been drawn to strengthen the radiochemical analysis in 2014.

The limited instruments available for alpha spectrometry are the major constraints to develop this field. The necessary equipment has been requested for further development of Alpha spectrometric analysis work. Participated in two Proficiency Tests (PT) to validate the methods for alpha analysis. This laboratory needs more analytical instruments to provide complete analytical services for customers and R&D activities. Potential avenues for income generations have been identified and analysis of radioactive elements in bottled drinking water (especially the water used from different fountains), and industrial effluents for conformity assessments are few among them.

## **7.6 Nuclear Agriculture**

The AEA has taken an initiative to establish a National Centre for Nuclear Agriculture (NCNA) in cooperation with the Department of Agriculture. A project proposal submitted to International Atomic Energy Agency (IAEA) has been approved for implementation from January 2014.

The overall objective is to develop and implement programmes on the use of nuclear technology applications in the field of agricultural soil, water and plant nutrient studies, crop variety improvement and associated management technologies.

Nuclear techniques that are proposed to be facilitated under the project covers stable isotope techniques involved in soil, water and plant nutrient studies, C-13 screening

techniques in selection of breeding lines, radiation induced mutation breeding for crop improvement and other important crops such as rice, soya bean and some selected bio fuel crops. Use of COSMOS for efficient soil water monitoring programme will also be a priority area in the project.

## **7.7 Training Programmes-2013**

Following programmes were conducted by the LSD in 2013

1. IAEA/RCA Regional Training Course on Quality Management System and Its Application in Environmental Radionuclide Sampling and Analysis, 09-13 December 2013, Colombo, Sri Lanka was organized under IAEA/RCA Project RAS/7/021 “Marine benchmark study on the possible impact of the Fukushima radioactive releases in the Asia-Pacific Region”. The programme was conducted for 15 foreign participants and 09 local participants and the main objective of the programme was to train all participants in Quality Management Systems in accordance with ISO17025 standards.
2. An expert mission was carried out by an IAEA expert, Prof. Dariusz Wegrzynek , Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Krakow, Poland, 07th -11th January 2013 (3 days) for upgrade the analytical capabilities of existing ED-XRF system and to train local scientific staff.
3. An expert mission was carried out by an IAEA expert, Prof Yong Li under the RAS/5055 project to assist local project team to identify the soil sampling sites and sampling strategy on Fallout Radionuclide (FRN) technique to assess soil redistribution processes. During the expert mission a half a day seminar was organized for interested scientists on Fallout Radionuclides technique to assess soil redistribution rates at In-Service Training Institute, Gannoruwa. About Forty participants from the Universities and other government organizations were participated.
4. Provision of Training Opportunities to Graduate and Undergraduate students  
LSD Provided training opportunities to post graduate and undergraduate students of universities. Three postgraduate and one undergraduate research projects were supported by using nuclear analytical facilities available at LSD. Nine university students were given the opportunities to complete their Industrial/Internship training at LSD. Three scientific publications were made based on the research activities complete.

### **Recent Scientific Publications ( in 2013)**

a) Radioactivity levels of  $^{40}\text{K}$ ,  $^{226}\text{Ra}$ ,  $^{232}\text{Th}$ ,  $^{210}\text{Pb}$ ,  $^{137}\text{Cs}$  and  $^{134}\text{Cs}$  in marine and coastal sediment in selected locations of Sri Lanka.

V.A.Waduge\*, M.C.S. Seneviratne, T.N.Attanayake, W. M.I. Dissanayake, H. M. N. L. Handagiripathira, S. Sanjeevani,

Presented at 69<sup>th</sup> Annual Scientific Session of Sri Lanka Association for the Advancement of Science (SLAAS) 2013

b) Chemical Characterization of paddy soil and water from chronic kidney disease (CKD) prevailing areas of Padaviya.

K.A. Dinesha Lakmali<sup>1</sup>, V.A. Waduge<sup>2</sup>, M.H.J.P. Gunarathna<sup>1</sup>

<sup>1</sup>*Department of Soil and Water Resources Management, Faculty of Agriculture, Rajarata university of Sri Lanka, Anuradhapura.*

<sup>2</sup>*Life Sciences Division, Atomic Energy Authority, No.60/460, Baseline Road, Orugodawatta, Wellampitiya*

c) Establishment of radiochemical protocol for determination of uranium isotopes (<sup>234</sup>U, <sup>235</sup>U and <sup>238</sup>U) in sea water by alpha particle spectrometry

H. M. N. L. Handagiri<sup>1\*</sup>, P. Mahawatta<sup>2</sup>, M.C.S. Seneviratne<sup>1</sup>

<sup>1</sup> Atomic Energy Authority, 60/460, Baseline Road, Orugodawatte, Wellampitiya.

<sup>2</sup> Department of Nuclear Science, University of Colombo.

69<sup>th</sup> Annual Scientific Session of Sri Lanka Association for the Advancement of Science (SLAAS) 2013

d) Preliminary Results of Cs-137 and Cs-134 in seawater after the nuclear power plant accident in Fukushima, Japan.

<sup>1</sup>P.L.WICKRAMASOORIYA, <sup>2</sup>V.A.WADUGE, <sup>3</sup>M.Y.UDUGALA-GANEHENEGE\*

<sup>1</sup> *Postgraduate Institute of science, University of Peradeniya*

<sup>2</sup> *Atomic Energy Authority, 60/460, Baseline Road, Orugodawatte, Wellampitiya*

<sup>3</sup> *Department of Chemistry, Faculty of Science, University of Peradeniya*

Proceedings, 2<sup>nd</sup> International Symposium on Water Quality and Human Health: Challenges Ahead, p 10-11

## 8. Isotope Hydrology Programme

- Activities Carried Out

### 1. Seminar on “Isotope Techniques for National Development”

Isotope Hydrology Section organized and concluded successfully a half day seminar on “Isotope Techniques for National Development” on 20<sup>th</sup> June 2013 at the Auditorium of Department of Irrigation. The objective of the seminar was to make the Top Level Managers of the institutes related to Water Resources, Dams, Reservoirs and Earth Sciences to make aware of the use of Isotope Techniques and to introduce the latest nuclear technology available in the AEA for isotope hydrology. Forty persons including Scientists, Engineers, Executives and Academics on Water Management, Dam Safety and Earth Sciences engaged to accomplish this seminar successfully.



Dr. H. M. T. G. A. Pitawala and Dr. H. A. Dharmagunawardane from Department of Geology, University of Peradeniya, presented about “Fundamentals and Application of Stable Isotopes” and on “Environmental Isotopes in Groundwater Studies” respectively as resource persons of this seminar. Mr. Viraj Edirisinghe, senior scientific officer, Isotope Hydrology Section of AEA presented “Isotopic Case Studies in Sri Lanka”.

**Fig. 8.1: IAEA/RCA Regional Training Course on “Groundwater Dynamics using Isotope and Other Tools” under RCA project RAS/7/022.**

IAEA/RCA Regional Training course on “Groundwater Dynamics using Isotope and Other Tools” was organized under RCA project RAS/7/022 from 5<sup>th</sup> to 9<sup>th</sup> August 2013 in Colombo. 23 participants engaging in the field of isotope hydrology, from Asia and the Pacific Region participated in this training course. Also 14 local participants from End-User Institutes and Universities participated in the training course. General concepts of groundwater dynamics, groundwater dating, Models for interpretation of groundwater age, Geochemical modeling, Ultra low level tritium analysis were the main topics discussed during this course. Dr. S.K. Gupta and Dr. Uwe Morgenstern from IAEA delivered the lectures as resource persons.





### **1. University Students/Undergraduate Training program.**

- a. One undergraduate from University of Rajarata completed her 06 months research on “Isotopic Investigation on groundwater recharge in upper Attanagaluoya basin”
- b. Two undergraduates from Dept. of Geology, University of Peradeniya were trained for one month.
- c. Four undergrads from Department of Earth Sciences, University of Moratuwa were trained for 6 months (Bogala-Stage-1).
- d. Another 05 undergraduates from Department of Earth Sciences, University of Moratuwa are being trained for their final year research project on water leakage at Bogala Graphite Mines (Bogala-stage-2)

### **Ongoing Projects**

#### **1. Isotope Study at proposed Broadlands hydropower project area Polpitiya, Lakshapana**

Isotope study is being carried out at the above site to see any changes in the surrounding waters with the completion of the whole project. This study would cover natural isotopes (stable and radioactive) and chemical analysis (major ions & other basic water quality parameters) in groundwater, surface water and rainwater samples collecting in project area. This study is carried out on the request of Broadlands Hydropower Project under the Ceylon Electricity Board (CEB). Water samples are being collected by Broadlands Hydropower Project (BHPP) staff bimonthly and send them to the AEA laboratories for analysis



Fig.8.2 : Collecting water samples at the Broadlands Hydropower Project

#### **2. Investigation of water seepage/leakage at Bogala Graphite Mine.**

An isotope Study was carried out at Bogala Graphite Mine to find the source of the seepage/leakage occurring in the mine. For this, isotopes (Deuterium and Oxygen-18) were measured in rain water, groundwater and seepage water in mine site to see any interconnection between them. This study was carried out in collaboration with Earth Resources Engineering Department, University of Moratuwa. During the stage one of this study, it was confirmed that no immediate effect/direct flow of surface water stream to the mine leakage.



Fig. 8.3: Investigation of water seepage/leakage at Bogala Graphite Mine.

3. **Influence of rainfall variations on hard rock aquifers in dry zone of Sri Lanka:** An assessment using combined hydro-meteorological and isotope techniques in the North central province of Sri Lanka (ongoing project)

The aim of this project is to study the influence of groundwater by North-East Monsoon rain using isotope techniques. This is a pilot study to investigate the groundwater recharge mechanism in Kalaoya and Ambanganga basins. This study will provide the information to demarcate the protection zones (groundwater recharge zones) to prevent any groundwater pollutions in future and to find safe water for the people in the area. Samples are being collected during April, September and December.



Fig.8.3: Collecting samples at the site

4. **Determining Isotope indices of North-East monsoon rain (Baseline Survey)**

The aim of this project is to study the variation of stable isotopes (Deuterium and Oxygen-18) in North-East Monsoon rain providing the data to make a baseline map for isotopes in rain in Sri Lanka. This baseline data will provide sufficient data for future groundwater studies in the study area using isotope technique. Under this study, 19 rain water collecting stations were established successfully in

North Central, Central and Eastern provinces, covering the dry and intermediate zones affecting North East monsoon. From these stations rain water is being collected monthly and brought to the AEA twice per year for analysis.



Fig.8.4: Working at the Site

#### **5. Groundwater recharge study in Jaffna Peninsula; An assessment using isotope and chemical method**

The aim of this study is to investigate the groundwater recharge mechanism and recharge rate in shallow karstic limestone aquifer system in Jaffna peninsula. This study is being carried out in collaboration with Water Resources Board (WRB) under IAEA/RCA project – RAS/7/022. Sampling is being done by WRB during pre and post monsoon periods in October and March respectively. Isotope analysis is being done by the AEA and wet chemical analysis is being done by WRB.



Fig.8.5: Carrying out work at the site



### Summary of Water Sample Analysis for Isotopes in 2013

Project	Collaborative Institute	Samples Received			Number of Samples Analyzed		
		<i>Stable isotopes</i>	<i>Tritium</i>	<i>Chemical</i>	<i>Stable isotopes</i>	<i>Tritium</i>	<i>chemical</i>
GNIP	AEA / IAEA	12	12	-	08	-	-
Broadlands Hydro Power Project	CEB	57	-	20	57	-	10
Bogala Graphite Mine - Leakage test	University of Moratuwa & Bogala Graphite Mines Ltd	253		-	249	-	-
Bolgoda Lake Study	Life Science Div.- AEA	37	-	-	27	-	-
IAEA Proficiency Test	IAEA	-	08	-	-	08	-
Uma Oya study	University of Peradeniya (Undergraduate training)	27	05	-	-	-	-
Upper Attanagaluoya basin	AEA/ University of Rajarata (Undergraduate training)	89	-	-	89	-	-
Jaffna groundwater study	Water Resources Board & AEA (RCA project)	114	114	-	52	13	-
Kalaoya and Ambanganga basins	AEA / Dept. Of Geology-U of Peradeniya	320	300	273	218	23	180
Thermal springs along Highland Vijayan Boundary	AEA / Dept. Of Geology-U of Peradeniya	72	-	-	55	-	-
Mannar-Groundwater study	Water Resources Board	25	-	-	06	-	-
Rathupaswala-groundwater study	Water Resources Board	22	-	-	22		
<b>Total</b>		<b>1028</b>	<b>439</b>	<b>293</b>	<b>783</b>	<b>44</b>	<b>190</b>

## **9. Information Services**

### **9.1 International Nuclear Information System (INIS)**

The AEA has the INIS database and it is being updated with the compact disks containing latest information on research carried out in nuclear science and technology provided by the IAEA periodically, free of charge. The scientific community of Sri Lanka has been informed about this system and can make use of it to obtain information on current developments in their respective fields.

### **9.2 Current Awareness Programmes**

#### **9.2.1 Exhibitions, lectures and Training Courses**

Atomic Energy Authority (AEA) participated in Dayta Kirule-2013 held in Ampara presenting an attractive stall. School Children and general public visited this stall to get knowledge on peaceful applications of nuclear technology. This exhibition was held from 2<sup>nd</sup> to 12<sup>th</sup> February 2013. The stall of the AEA presented many exhibits including a model of a Nuclear Power Plant and an X-ray facility.

A series of lectures on Nuclear Science component of the A/L Physics syllabus stored in Compact Disks designed by AEA were given to A/L students who requested them at a nominal price.

AEA also participated in many school exhibitions to disseminate knowledge on nuclear science to students.

### **9.2. Youth Nuclear Society of Sri Lanka**

**“awareness of the benefits of Nuclear Technology through the Youth Nuclear Society of Sri Lanka (YNSS)”**

1. Eight lectures were conducted on “Electricity Generation using Nuclear Technology” for different target groups (Staff of Fire fighters, Air Force Sri Lanka, Students of AETI, Orugodawatte, A/L Mathematics & Biological students of Royal Central College, Pollonnaruwa, Staff of Provincial Department of Health services North Central, Pollonnaruwa, Teachers & A/ L Students, who came from Yashodara Devi Balika Vidyalaya, Gampha & Maliyadeva Boys School, Kurunegala) from January to December 2013.

2. A quizzes programme, one day lectures and seminar were held on three exhibitions including Dayata Kirula from 2013.

#### **Ongoing activities**

1. Prepared a Booklet on “Electricity Generation using Nuclear Power” for the distribution among A/ L and university Students & general Public to make aware of the Technology.

2. Uploaded the documents and news to the AEA Web page ([www.aea.gov.lk](http://www.aea.gov.lk)), YNSS Web page (<http://ynssl.wordpress.com>) & Facebook Page (“Youth Nuclear Society of Sri Lanka”)
3. Prepared an article on the theme of “How effect the Kudankulam Nuclear Power Plant to Sri Lanka”.

### **Islandwide seminars on Electricity Generation using Nuclear Power and Peaceful applications of Nuclear Science & Technology**

Under the “Raise awareness of the benefits of Nuclear Technology”, Youth Nuclear Society of Sri Lanka (YNSS) conducted 02 awareness programmes in Pollonnaruwa recently.

The School Seminar was conducted to the A/L Biology and Mathematics Students on the theme of “Peaceful applications of Nuclear Science/ Electricity Generation using Nuclear Power” at Royal Central College, Pollonnaruwa on 20th February 2013.

The Professional Seminar was conducted to the officials in the Provincial Department of Health Services- North Central , Pollonnaruwa on the theme of “ Peaceful applications of Nuclear Science/Electricity Generation using Nuclear Power” on 21st February 2013. The Medical Physicians (Medical Doctors), Health Programme Officers, Public Health Inspectors (PHI) were participated the Seminar on behalf of the Department of Health Services- North Central , Pollonnaruwa

### **“ Deyata Kirula 2013”, Ampara “Raise awareness of the benefits of Nuclear Technology through the Youth Nuclear Society of Sri Lanka (YNSS) ”**



Youth Nuclear Society of Sri Lanka (YNSS) organized quizzes/ Speech Competition parallel to the “ Deyata Kirula 2013” National Exhibition in Ampara during the period of 23rd - 29th March 2013. The quizzes/ Speech Competitions were conducted among A/L students to enhance the knowledge on the areas of peaceful applications of nuclear science, electricity generation using Nuclear Power etc. Higher Diploma students of Hardy Advanced Technological Institute assisted to conduct the competitions very live and attractive manner.

Fig.9.1 : current awareness program on Nuclear Power

During the Competition more than 70 students (Ampara, Monaragala, Karaitivu, Badulla, Matale, Kandy, Dehiaththakandiya, Samanthurai etc) were felicitated with gifts & Certificates. YNSS made arrangements to give certificates to the students who assisted AEA from Hardy Advanced Technological Institute, Ampara.

YNSS stall displayed the full spectrum of the “Electricity generation using Nuclear Power” by posters, leaflets & video display. It helps to explain visitors of YNSS/ AEA Stall on various technical aspects of the Nuclear Power generation.



Fig.9.2: YNSS stall at the Exhibition

### **Establishment of the Forum on “Electricity Generation using Nuclear Power”**

YNSS active Members gathered to discuss how effectively they could make contributions to the ongoing national programme on “Electricity generation using Nuclear Power in Sri Lanka”. The participants discussed their own views. They were appointed to 13 committees to succeed the future plans of National Nuclear power programme. All the Members assigned to finalize their literature survey on or before 01<sup>st</sup> week of March 2014. YNSS scheduled to conduct the next awareness programme on 02<sup>nd</sup> week of March 2014.

### **More information on YNSS:**

YNSS Web site: <http://ynssl.wordpress.com/>

YNSS Facebook Group: [Youth Nuclear Society of Sri Lanka \(YNSS\)](#)

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

**Contact: Mr. Malinda Ranaweera,**

**E-mail:** malinda@aea.gov.lk

**Participation of AEA Officials in Seminars / Training Programmes / Workshops / Meetings Held in  
Sri Lanka January - December 2013**

Se. No.	File No.	Name of Officer	Post	Field of training courses/ Seminars/Workshops/ Meetings	Project Number	Duration	Country	Sponsoring Institute
01	HIE/ 2013-01	Ms.Anoma Attanayake	Deputy Director, Radiation Processing Section, AEA	IAEA Regional Workshop on Occupational Radiation Protection in the Mining & Processing of Ores	RAS/9/064	05/02/13 08/02/13	Colombo, Sri Lanka	IAEA
02	HIE/ 2013-01	Mr. Neel Fernando	Senior Scientific Officer, Radiation Protection & Regulations, AEA	IAEA Regional Workshop on Occupational Radiation Protection in the Mining & Processing of Ores	RAS/9/064	05/02/13 08/02/13	Colombo, Sri Lanka	IAEA
03	HIE/ 2013-01	Ms. Kaushalya Gamage	Scientific Officer, Radiation Protection & Regulations, AEA	IAEA Regional Workshop on Occupational Radiation Protection in the Mining & Processing of Ores	RAS/9/064	05/02/13 08/02/13	Colombo, Sri Lanka	IAEA
04	HIE/ 2013-02	Mr. H.L. Anil Ranjith	Senior Deputy Director, Radiation Protection & Regulations, AEA	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA
05	HIE/ 2013-02	Mr. K.P.I.K. Kadadunna	Senior Scientific Officer, Radiation Protection & Regulations, AEA	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA
06	HIE/ 2013-02	Mr. H.J. Premakumara	Senior Scientific Officer, Radiation Protection & Regulations , AEA	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA

**Participation of AEA Officials in Seminars / Training Programmes / Workshops / Meetings Held in Sri Lanka**  
**January - December 2013**

Se. No.	File No.	Name of Officer	Post	Field of training courses/ Seminars/Workshops/ Meetings	Project Number	Duration	Country	Sponsoring Institute
07	HIE/ 2013-02	Ms. N.P.N. Karunaratne	Scientific Officer, Radiation Protection & Regulations, AEA	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA
08	HIE/ 2013-02	H.J. Dharmakeerthi	Technical Assistant, Radiation Protection & Regulations, AEA	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA
09	HIE/ 2013-03	Mr. Viraj Edirisinghe	Senior Scientific Officer, Isotope Hydrology Section, AEA	IAEA/RCA Regional Training Course on Groundwater Dynamics using Isotopes and Other Tools	RAS/7/022	05/08/13 09/08/13	Colombo, Sri Lanka	IAEA
10	HIE/ 2013-03	Ms. Chathurangi Gunasekara	Scientific Officer, Isotope Hydrology Section, AEA	IAEA/RCA Regional Training Course on Groundwater Dynamics using Isotopes and Other Tools	RAS/7/022	05/08/13 09/08/13	Colombo, Sri Lanka	IAEA
11	HIE/ 2013-03	Ms. Shakila Priyadarshane	Scientific Officer, Isotope Hydrology Section, AEA	IAEA/RCA Regional Training Course on Groundwater Dynamics using Isotopes and Other Tools	RAS/7/022	05/08/13 09/08/13	Colombo, Sri Lanka	IAEA
12	HIE/ 2013-04	Dr. R.L. Wijayawardana	Chairman, AEA	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
13	HIE/ 2013-04	Mr. P.D. Mahakumara	Senior Scientific Officer, General Scientific Division, Atomic Energy Authority	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA

**Participation of AEA Officials in Seminars / Training Programmes / Workshops / Meetings Held in Sri Lanka**  
**January - December 2013**

Se. No.	File No.	Name of Officer	Post	Field of training courses/ Seminars/Workshops/ Meetings	Project Number	Duration	Country	Sponsoring Institute
14	HIE/ 2013-04	Mr. R.M.M.P. Ranaweera	Technical Assistant, Radiation Processing Section, AEA	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
15	HIE/ 2013-05	Ms. H.M.N. Lakmali Handagiripathira	Senior Science Division, Life Sciences Division, AEA	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA
16	HIE/ 2013-05	Ms. T.G.S. Sanjeewani	Science Division, Life Sciences Division, AEA	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA
17	HIE/ 2013-05	Ms. Maheshika Darshani Kalpage	Science Division, Life Sciences Division, AEA	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA
18	HIE/ 2013-05	Ms. T.S.M. Tilaka Nanda Attanayaka	Technical Assistant, Life Sciences Division, AEA	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA
19	HIE/ 2013-05	Ms. W.M. Indrani Dissanayake	Technical Assistant, Life Sciences Division, AEA	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA

**Participation of AEA Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**  
**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project Number</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>01</b>	13/04	Mr. Pragreeth Kadadunna	Senior Scientific Officer, Radiation Protection & Regulations, AEA	International Conference on Effective Nuclear Regulatory Systems: Transforming Experience into Regulatory Improvements		08/04/13 12/04/13	Ottawa, Canada	IAEA
<b>02</b>	13/05	Mr. Kapila de Silva	Senior Scientific Officer, Radiation Protection & Regulations, AEA	International Conference on the Safety and Security of Radioactive Sources : Maintaining the Continuous Global Control of Sources Throughout their Life Cycle		27/10/13 31/10/13	Abu Dhabi, United Arab Emirates	IAEA
<b>03</b>	13/08	Ms. Dulanjalee Madhusa	Scientific Officer, Life Sciences Division, AEA	Regional Training Course on Application of Stable Isotope & Trace Element Analysis for Food Traceability	RAS/5/062	28/01/13 08/02/13	Pulau pinang, Malaysia	IAEA
<b>04</b>	13/10	Mr. Shantha Thenuwara	Deputy Director, Radiation Protection & Regulations, AEA	The First Meeting of the Project Coordinators of TC Project RAS/9/061 Strengthening Regional nuclear Regulatory Authorities and Safety Culture	RAS/9/061	26/02/13 28/02/13	Vienna, Austria	IAEA
<b>05</b>	13/11	Ms. Sanduni Rathnayake	Scientific Officer, Radiation Processing Section, AEA	IAEA/RCA Regional Training course on Basic Radiation Processing of Polymer Focusing on Radiation Grafting	RAS/1/014	15/04/13 19/04/13	Manili, Philippines	IAEA



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<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project Number</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>06</b>	13/12	Ms. Lakmali Hadagiripatira	Senior Scientific Officer, Life Sciences Division, AEA	IAEA/RCA Regional Training Course on the Analysis of Marine Radioactivity with Application of Radio-analytical Procedure on Environmental Marine Samples	RAS/7/021	15/04/13 25/04/13	Xiamen, People's Republic of China	IAEA
<b>07</b>	13/13	Dr. R.L. Wijayawardana	Chairman, AEA	Regional Project Coordination Meeting on Supporting Decision Making for Nuclear Power Planning & Development	RAS/2/016	18/03/13 22/03/13	Vienna, Austria	IAEA
<b>08</b>	13/14	Mr. H.G.P.Karunaratne	Senior Deputy Director, International Cooperation Division, AEA	Workshop on Pre-Project Assistance and Project Design of Proposed National TC Concepts under TCP Cycle 2014-2015	RAS/0/063	11/02/13 15/02/13	Vienna, Austria	IAEA
<b>09</b>	13/16	Mr. Anil Ranjith	Senior Deputy Director, Radiation Protection & Regulations, AEA	International Conference on Nuclear Security: Enhancing Global Efforts at IAEA Headquarters.		01/07/13 05/07/13	Vienna, Austria	IAEA
<b>10</b>	13/18	Mr. Anil Ranjith	Senior Deputy Director, Radiation Protection & Regulations, AEA	Meeting with IAEA Legal Division on Finalization of Sri Lanka AEA Draft Act	RAS/0/056	27/08/13 30/08/13	Vienna, Austria	IAEA

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<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project Number</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>11</b>	13/18	Mr. Pasan Gunasena	Working Director, AEA	Meeting with IAEA Legal Division on Finalization of Sri Lanka AEA Draft Act	RAS/0/056	27/08/13 30/08/13	Vienna, Austria	IAEA
<b>12</b>	13/20	Ms. Chamini Herath	Scientific Officer, Radiation Protection & Regulations, AEA	Regional Workshop on Effective Border Control Coordination for Asia Pacific and Middle East Countries;		20/02/12 22/02/13	Manili, Philippines	IAEA
<b>13</b>	13/22	Mr. A. Jayalath	Deputy Director, Radiation Protection & Regulations, AEA	IAEA Technical Meeting of the Response & Assistance Network (RANET)		04/02/13 08/02/13	Vienna, Austria	IAEA
<b>14</b>	13/23	Mr. Dinesh Kumara	Scientific Officer, General Scientific Division, AEA	Interregional Workshop on Capture of High Quality Video Materials with Core Users - Part B: Field Video Production	INT/9/174	18/03/13 22/03/13	Karlsruhe, Germany	IAEA
<b>15</b>	13/24	Mr. C. Kasige	Senior Deputy Director, General Scientific Division, AEA	Inter-regional on Capture of High Quality Video Materials with Core Users part A-lecture Capture	INT/9/174	15/04/13 19/04/13	Vienna, Austria	IAEA

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<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project Number</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>16</b>	13/28	Mr. D.G.L. Wickramanayake	Director, AEA	35th Regional Meeting of the National RCA Representatives		19/03/13 22/03/13	Nay Pyi Taw, Myanmar	Govt. of Sri Lanka
<b>17</b>	13/33	Mr. V. Waduge	Senior Deputy Director, Life Sciences Division, AEA	Interregional Advanced Training Course on Marine Radioactivity : Analytical Techniques and Quality Management	INT/7/018	08/07/13 19/07/13	Karlsruhe , Germany	IAEA
<b>18</b>	13/37	Mr. Kapila de Silva	Senior Scientific Officer, Radiation Protection & Regulations, AEA	Regional Workshop on Sharing Experience and Progress Made in Establishing a national Strategy for Education and Training in Radiation, Transport and Waste Safety	RAS/9/066	17/06/13 20/06/13	Kuala Lumpur, Malaysia	IAEA
<b>19</b>	13/38	Mr. Anura Jayathilake	Senior Scientific Officer, NCNDT, AEA.	NDT - pre-inspection of a Cessna Aircraft in Maldives		10/03/13 12/03/13	Maldives	NDT Inspection
<b>20</b>	13/39	Mr. D.G.L. Wickramanayake	Director, AEA	Kick-off meeting for the RCA/UNDP project on Electron Beam Applications for Value Addition to Food and Industrial Products and Degradation of Environmental Pollutants in the Asia Pacific Region		02/05/13 03/05/13	Phuket, Thailand	RCA/UNDP

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Se. No.	File No.	Name of Officer	Post	Field of training courses/ Seminars/Workshops/ Meetings	Project Number	Duration	Country	Sponsoring Institute
21	13/40	Mr. H.M.N.R. Bandara	Deputy Director, International Cooperation Division, AEA	Workshop to Sensitize Member States to the Integrated Nuclear Security Support Plan (INSSP) Concept		11/06/13 13/06/13	Kuala Lumpur, Malaysia	IAEA
22	13/40	Mr. S.S.K. Kolambage	Scientific Officer, Radiation Protection & Regulations, AEA	Workshop to Sensitize Member States to the Integrated Nuclear Security Support Plan (INSSP) Concept		11/06/13 13/06/13	Kuala Lumpur, Malaysia	IAEA
23	13/41	Mr. Malinda Ranaweera	Technical Assistant, Industrial Applications Division, AEA	The Ninth Annual World Nuclear University (WNU) Summer institute,	INT/0/087	29/06/13 10/08/13	Oxford, United Kingdom	IAEA
24	13/45	Ms. Kaushalya Gamage	Scientific Officer, Radiation Protection & Regulations, AEA	Postgraduate Educational Course in Radiation Protection and the Safety of Radioactive Sources	RAS/9/066	10/06/13 13/12/13	Kuala Lumpur, Malaysia	IAEA
25	13/47	Ms. Chathushka Premachandra	Scientific Officer, NCNDT, AEA.	IAEA/RCA Regional Training Course on Use of High Energy Radiation Sources and Advanced Supplementary Techniques for NDT Applications	RAS/1/013	01/07/13 05/07/13	Tiruchirappalli, India	IAEA

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<b>26</b>	13/48	Ms. Champa Dissanayake	Senior Scientific Officer, Life Sciences Division, AEA	IAEA/RCA Regional Training Course on the Use of Compound Specific Isotope Analysis (CSIA) for the Identification of Hot Spots of Land Degradation in the Landscape	RAS/5/055	08/07/13 19/07/13	Beijing, china	IAEA
<b>27</b>	13/49	Mr. A. Jayalath	Deputy Director, Radiation Protection & Regulations, AEA	Response and Assistance Network (RANET) Workshop		28/05/13 31/05/13	Fukushima Prefecture, Japan	IAEA
<b>28</b>	13/51	Mr. Anil Ranjith	Senior Deputy Director, Radiation Protection & Regulations, AEA	Nuclear Law Institute 2013 Session		29/09/13 11/10/13	Vienna, Austria	IAEA
<b>29</b>	13/55	Mr. Prageeth Kadadunna	Senior Scientific Officer, Radiation Protection & Regulations, AEA	Regional Workshop on the Formulation and Implementation of National Policy and Strategy for the Management of Radioactive Wastes and DSRS	RAS/9/071	25/11/13 29/11/13	Hanoi, Vietnam	IAEA
<b>30</b>	13/55	Ms. Nirmali Karunaratne	Scientific Officer, Radiation Protection & Regulations, AEA	Invitation to the "Regional Workshop on the Formulation and Implementation of National Policy and Strategy for the Management of Radioactive Wastes and DSRS"	RAS/9/071	25/11/13 29/11/13	Hanoi, Vietnam	IAEA

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Se. No.	File No.	Name of Officer	Post	Field of training courses/ Seminars/Workshops/ Meetings	Project Number	Duration	Country	Sponsoring Institute
31	13/58	Mr. T.H.S. Shantha	Deputy Director, Radiation Protection & Regulations, AEA	Regional Meeting on Developing the Legal and Regulatory Framework	RAS/9/061	03/06/13 07/06/13	Vienna, Austria	IAEA
32	13/62	Mr. Neel Fernando	Senior Scientific Officer, Radiation Protection & Regulations, AEA	Regional Training Course on “Modular Design of Processing and Storage Facilities for Small Volumes of Low and Intermediate Level Radioactive Wastes including Disused Sealed Sources”	RAS/9/071	30/09/13 04/10/13	Tangerang Selatan, Indonesia.	IAEA
33	13/67	Mr. T.H.S. Shantha	Deputy Director, Radiation Protection & Regulations, AEA	High Level Regional Meeting on the Regulatory Infrastructure for the Control of Radiation Source	RAS/9/062	12/08/13 15/08/13	Kathmandu, Nepal	IAEA
34	13/68	Ms. Lakmali Handagiripathira	Senior Scientific Officer, Life Sciences Division, AEA	IAEA/RCA Mid Term Coordination Meeting on the Supporting Sustainable Air Pollution Monitoring Using Nuclear Analytical Technology.	RAS/7/023	25/11/13 29/11/13	Manila, The Philippines	IAEA
35	13/69	Dr. R.L. Wijayawardana	Chairman, AEA	International Ministerial Conference on Nuclear Power in 21st Century		27/05/13 29/05/13	Saint Petersburg, Russian Federation	Govt. of Sri Lanka

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36	13/71	Dr. R.L. Wijayawardana	Chairman, AEA	Consultative Meeting to Review the 2014-2018 Country Programme Framework (CPF 2014-2017) for Sri Lanka		22/07/13 26/07/13	Vienna, Austria	IAEA
37	13/71	Mr. H.G.P. Karunaratne	Senior Deputy Director, International Cooperation Division, AEA	Consultative Meeting to Review the 2014-2018 Country Programme Framework (CPF 2014-2017) for Sri Lanka		22/07/13 26/07/13	Vienna, Austria	IAEA
38	13/71	Mr. H.M.N.R. Bandara	Deputy Director, International Cooperation Division, AEA	Consultative Meeting to Review the 2014-2018 Country Programme Framework (CPF 2014-2017) for Sri Lanka		22/07/13 26/07/13	Vienna, Austria	IAEA
39	13/72	Ms. Sisara Sanjeevani	Scientific Officer, Life Sciences Division, AEA	Regional Training Course on Interpretation and Statistical Analysis of Nuclear and Isotopic Data in Addressing Climate Change Issues	RAS/7/024	26/08/13 30/08/13	Kuala Lumpur, Malaysia	IAEA
40	13/73	Mr. V.A. Waduge	Senior Deputy Director, Life Sciences Division, AEA	IAEA/RCA 2nd Annual Project Review Meeting	RAS/7/021	12/08/13 16/08/13	Koror, Palau	IAEA

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Se. No.	File No.	Name of Officer	Post	Field of training courses/ Seminars/Workshops/ Meetings	Project Number	Duration	Country	Sponsoring Institute
41	13/74	Ms. Champa Dissanayake	Senior Scientific Officer, Life Sciences Division, AEA	Regional Training Courses of RCA/UNDP Project on Electron Beam Applications for Value Addition to Food and Industrial Products in the Asia Pacific Region		19/08/13 23/08/13	Jeongup, Korea	RCA/UNDP
42	13/75	Ms. Uththara Perera	Scientific Officer, International Cooperation Division, AEA	Nuclear Energy Administration Course		21/10/13 08/11/13	Japan	MEXT/WE RC
43	13/79	Mr. T.M.R. Tennakoon	Senior Deputy Director, NCNDT, AEA	IAEA/RCA Regional Training Course on Use of Advanced NDE Techniques for In-Service Inspection of NPP and Other Civil Engineering Structures for Life Prediction and Extension	RAS/1/013	09/09/13 13/09/13	Shanghai, China	IAEA
44	13/79	Mr. Anura. Jayatilaka	Senior Scientific Officer, NCNDT, AEA.	IAEA/RCA Regional Training Course on Use of Advanced NDE Techniques for In-Service Inspection of NPP and Other Civil Engineering Structures for Life Prediction and Extension	RAS/1/013	09/09/13 13/09/13	Shanghai, China	IAEA



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<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project Number</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>45</b>	13/81	Dr. R.L. Wijayawardana	Chairman, AEA	2013 RCARO/KAERI Regional Workshop on Research Reactor, Radiation Application, Small and Medium-Sized Reactor Technology		07/10/13 18/10/13	KAERI, Daejeon, Korea	RCARO/K AERI
<b>46</b>	13/84	Mr. Sumith Kolambage	Senior Scientific Officer, Radiation Protection & Regulations, AEA	Training Course on Radioactive Waste Management Stakeholder Considerations as Inputs into the Strategic Planning for Radioactive Waste Management	INT/2/013	21/10/13 25/10/13	Quezon City, Philippines	IAEA
<b>47</b>	13/87	Mr. Viraj Edirisinghe	Senior Scientific Officer, Isotope Hydrology Section, AEA	IAEA/RCA Technical Meeting on Processing, Analysis, and Interpretation of Isotopic and Hydrogeochemical Data for Groundwater Dynamics and Recharge	RAS/7/022	04/11/13 08/11/13	Beijing, Chaina	IAEA
<b>48</b>	13/89	Mr. Prasad Mahakumara	Senior Scientific Officer, General Scientific Division, AEA.	Regional Training Course on Measurement Protocols for National Radon Strategies”	RAS/9/069	09/09/13 13/09/13	Bangkok, Thailand	IAEA
<b>49</b>	13/92	Dr. R.L. Wijayawardana	Chairman, AEA	57th Annual Regular Sessions of the International Atomic Energy Agency (IAEA) General Conference		16/09/13 20/09/13	Vienna, Austria.	Govt. of Sri Lanka

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<b>50</b>	13/92	Mr. H.G.P. Karunaratne	Senior Deputy Director, International Cooperation Division, AEA	57th Annual Regular Sessions of the International Atomic Energy Agency (IAEA) General Conference, 16-20 September 2012 and the 41st Regional Cooperative Agreement (RCA) General Conference Meeting, 13th September 2013,		16/09/13 20/09/13	Vienna, Austria.	Govt. of Sri Lanka
<b>51</b>	13/92	Mr. D.G.L. Wickramanayake	Director, AEA	57th Annual Regular Sessions of the International Atomic Energy Agency (IAEA) General Conference		16/09/13 20/09/13	Vienna, Austria.	Govt. of Sri Lanka
<b>52</b>	13/94	Ms. Maheshika Kalpage	Scientific Officer, Life Sciences Division, AEA	IAEA/RCA Regional Training Course on Use of Nuclear and Isotopic Techniques in Assessment of Fertilizer and Water Use Efficiency	RAS/5/056	23/09/13 27/09/13	Manila, Philippines	IAEA
<b>53</b>	13/96	Mr. Prageeth. Kadadunna	Senior Scientific Officer, Radiation Protection & Regulations, AEA	Train-the-Trainers Workshop on the International Nuclear and Radiological Event Scale (INES)		07/10/13 10/10/13	Vienna, Austria.	IAEA
<b>54</b>	13/97	Mr. Jayantha Premakumara	Scientific Officer, Radiation Protection & Regulations, AEA	Second ASEAN Regional Forum Workshop on Non-Proliferation Nuclear Forensics		10/09/13 12/09/13	Bangkok, Thailand	IAEA

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<b>55</b>	13/97	Ms. Thilaka Attanayaka	Technical Assistant, Life Sciences Division, AEA	Second ASEAN Regional Forum Workshop on Non-Proliferation Nuclear Forensics		10/09/13 12/09/13	Bangkok, Thailand	IAEA
<b>56</b>	13/99	Ms. Anoma Ratnayake	Deputy Director, Radiation Processing Section, AEA	Annual Review Meeting of RCA-UNDP Project on Electron Beam Applications for Value Addition to Food and Industrial Products and Degradation of Environmental Pollutants in the Asia Pacific region		21/11/13 22/11/13	Philippines	RCA-UNDP
<b>57</b>	13/100	Mr. Neel Fernando	Senior Scientific Officer, Radiation Protection & Regulations, AEA	Second Regional Workshop on the Implementation of the IAEA General Safety Requirements Part 3: Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards.		28/10/13 01/11/13	Manila, Philippines	IAEA
<b>58</b>	13/103	Mr. Jayantha Premakumara	Scientific Officer, Radiation Protection & Regulations, AEA	Regional Training Course on the Safe Transport of Radioactive Material	RAS/9/067	04/11/13 08/11/13	Beijing, China	IAEA
<b>59</b>	13/105	Mr. Anil Ranjith	Senior Deputy Director, Radiation Protection & Regulations, AEA	Technical Meeting on the Draft Implementing Guide Entitled "Implementing the Legislative and Regulatory Framework for Nuclear Security"		28/10/13 01/11/13	Vienna, Austria	IAEA

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<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project Number</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>60</b>	13/109	Mr. V.A. Waduge	Senior Deputy Director, Life Sciences Division, AEA	Mid-term Project Review and Coordination Meeting	RAS/7/024	02/12/13 05/12/13	Goa, India	IAEA
<b>61</b>	13/111	Ms. Champa Dissanayake	Senior Scientific Officer, Life Sciences Division, AEA	IAEA/RCA Meeting on Development of Soil Conservation Strategies and Second Coordination Meeting of Project RAS/5/055 : Improving Soil Fertility, Land Productivity and Land Degradation Mitigation (RCA)	RAS/5/055	09/12/1313/ 12/13	Dalat, Vietnam	IAEA
<b>62</b>	13/112	Mr. Sumith Kumara	Senior Scientific Officer, Radiation Protection & Regulations, AEA	Regional Training Course on the Safe Transport of Radioactive Material	RAS/9/067	04/11/13 20/12/13	Beijing China	IAEA
<b>63</b>	13/112	Ms. Nirasha Ratnaweera	Scientific Officer, General Scientific Division, AEA	Regional Training Course on the Safe Transport of Radioactive Material	RAS/9/067	04/11/13 20/12/13	Beijing, China	IAEA
<b>64</b>	13/114	Mr. A. Jayalath	Deputy Director, Radiation Protection & Regulations, AEA	Final Project Coordination Meeting	SRL/9/009	25/11/13 29/11/13	Vienna, Austria	IAEA
<b>65</b>	13/114	Mr. H.G.P. Karunaratne	Senior Deputy Director, International Cooperation Division, AEA	Final Project Coordination Meeting	SRL/9/009	25/11/13 29/11/13	Vienna, Austria	IAEA

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<b>Se. No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project Number</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>1</b>	Mr. S.J.K.S. Kumara	Technical Assistant, Multipurpose Gamma Irradiation Facility, AEA	For Quality Assurance Inspection of Irradiator Machinery before Shipping to Sri Lanka for Plant Operators	SRL/5/043	12/02/13 23/02/13	India	IAEA
<b>2</b>	Mr. A.T.U.N. Seneviratne	Technical Assistant, Multipurpose Gamma Irradiation Facility, AEA	For Quality Assurance Inspection of Irradiator Machinery before Shipping to Sri Lanka for Plant Operators	SRL/5/043	12/02/13 23/02/13	India	IAEA
<b>3</b>	Ms. A.A. Ganga Madurakanthi	Scientific Officer, Multipurpose Gamma Irradiation Facility, AEA	Application of Isotopes and Radiation in Food and Agriculture	SRL/5/043	04/03/13 03/06/13	Budapest, Hungary	IAEA
<b>4</b>	Mr. M.D. Prabath Buddhika	Technical Assistant, Non-Destructive Testing Section (NCNDT) AEA	Fellowship in the field of Non Destructive Testing and Examination in Malaysia	SRL/1/007	07/01/13 01/03/13	Malaysia.	IAEA
<b>5</b>	Mr. K. Suresh Senanayake	Scientific Officer, Non-Destructive Testing Section (NCNDT), AEA	NDT on Eddy current and Thermography	SRL/1/007	04/03/13 26/04/13	Malaysia.	IAEA
<b>6</b>	Mr. M.W. Sanjaya Perera	Scientific Officer, Non-Destructive Testing Section (NCNDT), AEA	NDT Testing and Examination	SRL/1/007	26/08/13 18/10/13	Malaysia.	IAEA
<b>7</b>	Mr. Janitha Edirisinghe	Technical Assistant, Non-Destructive Testing Section (NCNDT), AEA	NDT Testing and Examination	SRL/1/007	13/05/13 05/07/13	Malaysia.	IAEA

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<b>8</b>	Mr. Prasad Mahakumara	Senior Scientific Officer, General Scientific Division, AEA.	Technical Features, Operation and Maintainanve of Nuclear Early Warning System	SRL/9/009	13/05/13 31/05/13	Germany	IAEA
<b>9</b>	Prof. W. Abeyewickreme,	AEA Board Member	Applying Molecular Diagnostics to Zoonotic Diseases	SRL/5/042	08.04.13 19.04.13	Vienna, Austria	IAEA
<b>10</b>	Mr. M.Y.D. Dayanath,	Technical Officer, Molecular Medicine Unit, University of Kelaniya.	Training in the field of Animal Diseases	SRL/5/042	02.04.13 15.05.13	Vienna, Austria	IAEA
<b>11</b>	Mr. Ramalingam Appudurai	Medical Physicist, Teaching Hospital, Jaffna.	Radiation Medicine and Health	SRL/6/033	14.10.13 13.12.13	Singapore	IAEA
<b>12</b>	Dr. Nadarajah Jeyakumaran	Consultant Clinical Oncologist, Teaching Hospital, Jaffna.	Radiation Medicine and Health	SRL/6/033	28.10.13 27.12.13	Singapore	IAEA
<b>13</b>	Mr. W.K.K. Perera	Senior Technical Officer, Nuclear Medicine Unit, Faculty of Medicine, University of Peradeniya.	Nuclear Medicine Imaging	SRL/6/032	01.07.13 31.08.13	Thailand	IAEA
<b>14</b>	Mr. N.A. Jayasooriya	Technical Officer, Nuclear Medicine Unit, Faculty of Medicine, University of Peradeniya.	Nuclear Medicine Imaging	SRL/6/032	01.07.13 31.08.13	Thailand	IAEA
<b>15</b>	Mrs. Y.M. Samarasinghe	Electrical Engineer (Generation Planning), Ceylon Electricity Board.	Sustainable Energy Development	SRL/2/008	10.06.13 14.06.20	Vienna, Austria	IAEA

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<b>16</b>	Mr. M.B.S. Samarasekara	Electrical Engineer (Generation Planning), Ceylon Electricity Board	Sustainable Energy Development	SRL/2/008	10.06.13 14.06.20	Vienna, Austria	IAEA
<b>17</b>	Mrs. M.T.K. De Silva	Electrical Engineer (Generation Planning), Ceylon Electricity Board.	Supporting Energy Planning and a Pre-feasibility Study for Nuclear Power and Human Resource Development in Nuclear Power Engineers	SRL/2/008	24.01.13 20.02.13	Vienna, Austria	IAEA
<b>18</b>	Mr. T.L.B. Attanayake	Electrical Engineer (Generation Planning), Ceylon Electricity Board	Supporting Energy Planning and a Pre-feasibility Study for Nuclear Power and Human Resource Development in Nuclear Power Engineers	SRL/2/008	21.01.13 20.02.13	Vienna, Austria	IAEA
<b>19</b>	Mr. D.M.K.M. Premathilaka	Electrical Engineer (Energy Marketing), Ceylon Electricity Board.	Supporting Energy Planning and a Pre-feasibility Study for Nuclear Power and Human Resource Development in Nuclear Power Engineers	SRL/2/008	21.01.13 20.02.13	Vienna, Austria	IAEA
<b>20</b>	Mr. C.K. Wickramatunga	Research Officer, Natural Resources Management Centre, P.O. Box 52, Sarasavi Mawatha, Peradeniya.	Group Fellowship Training on Soil and Water Management in Agriculture	RAS/5/064	07.10.13 05.11.13	Seibersdorf Austria	IAEA
<b>21</b>	Mrs. M.D.M. Gunawardhana	Research Officer, Grain Legume & Oil Crops Research & Development Centre, Angunakolapellessa.	Group Fellowship Training on Soil and Water Management in Agriculture	RAS/5/064	07.10.13 05.11.13	Seibersdorf Austria	IAEA

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<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project Number</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>01</b>	HIE/ 2013-01	Mr. K.P.S. Kumara	Lanka Mineral Sands Ltd., 541/21, Sarana Mawatha, Rajagiriya.	IAEA Regional Workshop on Occupational Radiation Protection in the Mining & Processing of Ores	RAS/9/064	05.02.13 08.02.13	Colombo, Sri Lanka	IAEA
<b>02</b>	HIE/ 2013-01	Mr. A.M.A.D. Madhurange	Petroleum Resources Development Secretariat, No. 80, Colombo 07.	IAEA Regional Workshop on Occupational Radiation Protection in the Mining & Processing of Ores	RAS/9/064	05.02.13 08.02.13	Colombo, Sri Lanka	IAEA
<b>03</b>	HIE/ 2013-02	Mr. R.M.L. Rathnathilaka	Staff Officer, Sri Lanka Navy	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA
<b>04</b>	HIE/ 2013-02	Mr. J.A.D.A. Perera	DDC, Sri Lanka Customs	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA
<b>05</b>	HIE/ 2013-02	Mr. K.V.G. Somarathna	SC, Sri Lanka Customs	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA
<b>06</b>	HIE/ 2013-02	Mr. A.A.D.H. Amarasinghe	Superintendent (Security), Sri Lanka Ports Authority	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA
<b>07</b>	HIE/ 2013-02	Mr. W.A.M.J. Perera	Senior Harbour Safety Officer, Sri Lanka Ports Authority	Sub-Regional Meeting on Nuclear Security Information & Coordination		14/05/13 16/05/13	Colombo, Sri Lanka	IAEA



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<b>08</b>	HIE/ 2013-03	Mr. A.S.M. Samarakoon	Hydrologist, Water Resources Board, 2A, Colombo 07.	IAEA/RCA Regional Training Course on Groundwater Dynamics using Isotopes and Other Tools	RAS/7/022	05.08.13 09.08.13	Colombo, Sri Lanka	IAEA
<b>09</b>	HIE/ 2013-03	Dr. H.M.T.G.A. Pitawala	Senior Lecturer, Department of Geology, University of Peradeniya.	IAEA/RCA Regional Training Course on Groundwater Dynamics using Isotopes and Other Tools	RAS/7/022	05.08.13 09.08.13	Colombo, Sri Lanka	IAEA
<b>10</b>	HIE/ 2013-04	Dr. A.M.H.S. Abeykoon	Senior Lecturer, Dept. of Electrical Engineering; University of Moratuwa, Katubedda, Moratuwa.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>11</b>	HIE/ 2013-04	Dr. M.P. Dias	Senior Lecturer and Head of Department of Electrical, Dept. of Electrical Engineering, University of Moratuwa, Katubedda, Moratuwa.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA

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<b>12</b>	HIE/ 2013-04	Prof. K.K.C.K. Perera	Professor of Mechanical Engineering, Dept. of Mechanical Engineering, University of Moratuwa, Katubedda, Moratuwa.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>13</b>	HIE/ 2013-04	Mr. A.W.M. R. B. Wijekoon	Electrical Engineer, Ceylon Electricity Board, Chittampalam A. Gardinar Mw., P.O. Box 50, Colombo 02.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>14</b>	HIE/ 2013-04	Mr. T.L.B. Attanayaka	Electrical Engineer, Ceylon Electricity Board, Sir Chittampalam A. Gardiner Mw., P.O. Box 540, Colombo 02.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>15</b>	HIE/ 2013-04	Ms. D.C. Hapuarachchi	Electrical Engineer, Ceylon Electricity Board, Sir Chittampalam A. Gardiner MW., P.O. Box 540, Colombo 02	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA

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<b>16</b>	HIE/ 2013-04	Mrs. M.T.K. De Silva	Chief Engineer, Ceylon Electricity Board, Generation Development Studies, Sir Chittampalam A. Gardiner Mw., P.O. Box 540, Colombo 02.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>17</b>	HIE/ 2013-04	Ms. W.M.N.D Nisansala	Ceylon Electricity Board, Sir Chittampalam A. Gardiner Mw., P.O. Box 540, Colombo 02.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>18</b>	HIE/ 2013-04	Mr. M.B.S. Samarasekara	Chief Engineer, Ceylon Electricity Board, Sir Chittampalam A. Gardiner Mw., P.O. Box 540, Colombo 02.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>19</b>	HIE/ 2013-04	Dr. P.N. Fernando	6/3 Palm Court, 6th Lane, Colombo 3	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA

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<b>20</b>	HIE/ 2013-04	Mr. R.J. Gunawardana	Additional Secretary (Technical), Ministry of Power & Energy, No. 72, Ananda Coomaraswamy Mw., Colombo 07.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>21</b>	HIE/ 2013-04	Mr. Chandana Jayalath	Senior Lecturer, Department of Physics, University of Perradeniya	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>22</b>	HIE/ 2013-04	Prof. K.K.Y.W. Perera	Senior Consultant, Ministry of Power & Energy, No. 72 Ananda Coomaraswamy Mw., Colombo 7.	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>23</b>	HIE/ 2013-04	Ms. Nadeesha Wickramage	Lecturer, Department of Physics, University of Ruhuna, Wellamadama, Matara	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA
<b>24</b>	HIE/ 2013-04	Pr. Remy Denzil Rosa,	Associate Professor / Head, Department of Physics, University of Colombo, Colombo 03	IAEA Interregional Workshop on Outreach and Raising Awareness for Planning Nuclear Power Programmes Using the Milestones Approach	INT/2/013	21.10.13 23.10.13	Colombo, Sri Lanka	IAEA

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<b>25</b>	HIE/ 2013- 05	Dr. M.P. Deeyamulla	Senior Lecturer, Department of Chemistry, University Of Kelaniya.	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA
<b>26</b>	HIE/ 2013- 05	Mr. W.I.H.K. Wijerathna	Marine Scientist, Marine Environmental Protection Authority (MEPA), Baseline Road, Colombo 09.	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA
<b>27</b>	HIE/ 2013- 05	Mr. K.A. Pandula Taepith	Lecturer, Department of Limnology, Faculty of Fisheries and Marine Sciences and Technology, University of Ruhuna	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA
<b>28</b>	HIE/ 2013-05	Mrs. K.A.W.S. Weerasekara	Scientific Officer, National Aquatic Resources Research & Development Agency, Crow Island, Colombo 15.	IAEA/RCA Regional Training Course for those with limited Quality Management Systems (QMS) Experience	RAS/7/021	09/12/13 13/12/13	Colombo, Sri Lanka	IAEA

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<b>01</b>	13/07	Dr. M.A.Y. Ariyaratne	Consultant Oncologist, National Cancer Institute, Maharagama	Request Nominations for FNCA Workshop	RAS/6/053	15.01.13 18.01.13	Bangkok, Thailand	IAEA
<b>02</b>	13/09	Dr. Aruna Pallewatta	Consultant Oncologist, National Hospital of Sri Lanka, Colombo 10 .	Regional Meeting on project design of RCA proposed Concepts for TCP 2014-2015	RAS/0/063	18.02.13 22.02.13	Vienna, Austria	IAEA
<b>03</b>	13/09	Dr. Sujeewa Weerasinghe	Consultant Oncologist, National Cancer Institute, Maharagama	Regional Meeting on project design of RCA proposed Concepts for TCP 2014-2015	RAS/0/063	18.02.13 22.02.13	Vienna, Austria	IAEA
<b>04</b>	13/09	Dr. Shiromani Edirimanna	Department of Agriculture, Peradeniya.	Regional Meeting on project design of RCA proposed Concepts for TCP 2014-2015	RAS/0/063	18.02.13 22.02.13	Vienna, Austria	IAEA
<b>05</b>	13/13	Prof. W. Abeyewickreme	Chairman, Ceylon Electricity Board, Chittampalam A. Gardinar Mw., Colombo 02.	Regional Project Coordination Meeting on Supporting Decision Making for Nuclear Power Planning & Development - Phase II	RAS/2/016	18.03.13 22.03.13	Vienna, Austria	IAEA

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<b>06</b>	13/14	Mr. A.I.M. Gunasekara	Manager (Operations), Marine Environment Protection Authority, P.O. Box 758, Baseline Road, Colombo 09.	Workshop on Pre-Project Assistance and Project Design of proposed National TC Concepts under TCP cycle 2014-2015	RAS/0/063	11.02.13 15.02.13	Vienna, Austria	IAEA
<b>07</b>	13/14	Dr. D.B.Wichramasinghe	Director General of Agriculture, Natural Resources Management Centre (NRMC), Department of Agriculture, Peradeniya.	Workshop on Pre-Project Assistance and Project Design of proposed National TC Concepts under TCP cycle 2014-2015	RAS/0/063	11.02.13 15.02.13	Vienna, Austria	IAEA
<b>08</b>	13/18	Mrs. Dhara Wijeyathilaka	Secretary, Min. of Technology & Research, No. 408, Galle Road, Colombo 03.	Meeting with IAEA Legal Division on Finalization of Sri Lanka AEA Draft Act	RAS/0/056	27.08.13 30.08.13	Vienna, Austria	IAEA
<b>09</b>	13/18	Mrs. D.V.V. Sriyangani Fernando	Consultant, Ministry of Justice, Superior Courts Complex, Adikarana Mawatha, Colombo.	Meeting with IAEA Legal Division on Finalization of Sri Lanka AEA Draft Act	RAS/0/056	27.08.13 30.08.13	Vienna, Austria	IAEA

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<b>10</b>	13/19	Eng. B.A. Peris	Director General, Geological Survey & Mines Bureau, No. 569, Epitamulla Road, Pitakotte.	Interregional IAEA-CYTED-UNECE Workshop on United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources - 2009 Applications in Uranium and Thorium Resources : Focus on Comprehensive Extraction	INT/2/015	09.07.13 12.07.13	Santiago, Chile,	IAEA
<b>11</b>	13/20	Mr. D.A.J. Gallage	Superintendent of Customs, Sri Lanka Customs, Colombo 01	Regional Workshop on Effective Border Control Coordination for Asia Pacific and Middle East Countries;		20.02.12 22.02.13	Manili, Philippines	IAEA
<b>12</b>	13/20	Mr. P.K. Wanigasinghe	Assistant Preventive Officer, Sri Lanka Customs, Colombo 01.	Regional Workshop on Effective Border Control Coordination for Asia Pacific and Middle East Countries;		20.02.12 22.02.13	Manili, Philippines	IAEA
<b>13</b>	13/20	Mr. J.A.P.U. Jayaweera	Assistant Superintendent of Customs, Sri Lanka Customs, Colombo 01.	Regional Workshop on Effective Border Control Coordination for Asia Pacific and Middle East Countries;		20.02.12 22.02.13	Manili, Philippines	IAEA



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<b>14</b>	13/26	Dr. H.D.B. Herath	Deputy Director, Environment & Occupational Health, Ministry of Health, Colombo 10.	NIRS Workshop on Radiation Emergency Medicine 2013		11.03.13 13.03.13	Chiba, Japan	Japanese Authoriteis
<b>15</b>	13/30	Dr. Ilmi Hewajulige	Principal Research Scientist, Industrial Technology Institute, 363, Bauddhaloka Mawatha, Colombo 07.	IAEA/RCA Workshop on Best Practice for Food Safety & Quality Applications of Food Irradiation	RAS/5/057	06.05.13 11.05.13	Shanghai, Chaina	IAEA
<b>16</b>	13/30	Ms. Karuna Warshamanna	Research Officer, Plant Quarantine Department, Department of Agriculture, Peradeniya.	IAEA/RCA Workshop on Best Practice for Food Safety & Quality Applications of Food Irradiation	RAS/5/057	06.05.13 11.05.13	Shanghai, Chaina	IAEA
<b>17</b>	13/31	Mrs. K.A.W.S. Weerasekara	Scientific Officer, National Aquatic Resources Research & Development Agency, Crow Island, Colombo 15.	IAEA/RCA Regional Training Course in Basic Ocean Sampling Practices in Member States	RAS/7/021	26.05.13 30.05.13	Terengganu, Malaysia	IAEA

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<b>18</b>	13/32	Mr. A.N.P. Weerasinghe	Medical Physicist, National Cancer Institute, Maharagama	IAEA/RCA Regional Training Course on Imaged Based Radiotherapy & QA for Lung and Gastrointestinal Cancers	RAS/6/053	06.05.13 10.05.13	Bangkok, Thailand	IAEA
<b>19</b>	13/33	Mr. S.M.S. Samarakoon	Assistant Director (Laboratory), Central Environmental Authority, Densil Kobbekaduwa Mawatha, Battaramulla.	Interregional Advanced Training Course on Marine Radioactivity : Analytical Techniques and Quality Management	INT/7/018	08.07.13 19.07.13	Karlsruhe, Germany	IAEA
<b>20</b>	13/35	Dr. D.K.K. Nanayakkara	Senior Lecturer, Nuclear Medicine Unit, Faculty of Medicine, University of Peradeniya, Peradeniya.	IAEA/RCA Regional Training Course on multi-Modality Approches in the Diagnosis of Cardiovascular Diseases	RAS/6/063	08.04.13 12.04.13	Gunma, Japan	IAEA
<b>21</b>	13/36	Mr. W.T.L.S. Fernando	Lecturer, Department of Physical Science and Technology, Faculty of Applied Science, University of Sabaragamuwa.	MEXT The Nuclear Reserchers Exchange Programme FY2013			Tokyo, Japan	MEXT

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<b>22</b>	13/36	Mr. K.T.M.U. Hemapala	Senior Lecturer, Department of Electrical Engineering, University of Moratuwa.	MEXT The Nuclear Reserchers Exchange Programme FY2013			Tokyo, Japan	MEXT
<b>23</b>	13/42	Mrs. M.T.K De Silva	Electrical Engineer, Ceylon Electricity Board, Chittampalam A Gardinar Mawatha, Colombo 02.	Regional Training Course for Train the Trainers e - Learning Course on Energy Planning : a Regional Traininig Course for Asia and the Pacific	RAS/0/064	13.05.13 17.05.13	Jakarta, Indonesia	IAEA
<b>24</b>	13/43	Dr. U. Sarawanamuttu	Consultant Oncologist, Provincial General Hospital, Rathnapura.	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM - 1st Group		14.06.13 13.07.13	Republic of Korea	PACT
<b>25</b>	13/43	Mr. H.M.A.J. Dissanayake	Radiation Therapist, Teaching Hospital, Kandy	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM - 1st Group		14.06.13 13.07.13	Republic of Korea	PACT

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<b>26</b>	13/43	Mr. P.N. Thenuwara	Medical Physicist, National Cancer Institute, Maharagama	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM - 1st Group		14.06.13 13.07.13	Republic of Korea	PACT
<b>27</b>	13/43	Dr. K.M.K. Perera	Consultant Oncologist, Provincial General Hospital, Badulla.	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM - 2nd Group		14.06.13 13.07.13	Republic of Korea	PACT
<b>28</b>	13/43	Mr. G.K. Dayananda	National Cancer Institute, Maharagama	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM - 2nd Group		14.06.13 13.07.13	Republic of Korea	PACT
<b>29</b>	13/43	Mr. K.K.D.L. Ruvinda	Medical Therapist, National Cancer Institute, Maharagama	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM - 2nd Group		14.06.13 13.07.13	Republic of Korea	PACT
<b>30</b>	13/43	Mr. N. Nimalanathan	Radiation Therapist, Provincial General Hospital, Badulla.	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM - 3rd Group		02.09.13 01.11.13	Republic of Korea	PACT

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<b>31</b>	13/43	Mr. Y.P.Y.P. Ariyasinghe	Medical Physicist, Teaching Hospital, Kandy.	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM - 3rd Group		02.09.13 01.11.13	Republic of Korea	PACT
<b>32</b>	13/43	Mr. I.C.S. Idamegedara	Radiation Therapist, Teaching Hospital, Karapitiya, Galle.	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health- KIRAM		02.10.13 01.11.13	Republic of Korea	PACT
<b>33</b>	13/45	Ms. S.N.C.W.M.P.S. K. Hulugalla	Medical Physicist and Radiation Protection Officer, Teaching, Hopspital, Kurunegala	Programme of Action for Cancer Therapy PACT - Coordination with Ministry of Health - KIRAM	RAS/9/066	10.06.13 13.12.13	Kuala Lumpur, Malaysia	IAEA
<b>34</b>	13/46	Mr. K.M.A. Kendaragama	Research Officer, Natural Resources Management Centre, P.O. Box52, Sarasavi Mawatha, Peradeniya.	IAEA/RCA Meeting on the Use of Participatory Tools (WOCAT-LADA) to Address the Assessment of the Efficiency of Soil Conservation Measures	RAS/5/055	17.06.13 21.06.13	Dhaka, Bangladesh	IAEA
<b>35</b>	13/50	Mrs. H.M.P.Hewavitharane	Entomologist, Anti Malaria Campaign, P.O. Box 1472, 555-5, Elvitigala Mawahta, Colombo 05.	FAO/IAEA Interregional Training Course On Use of Sterile Insect and Related Techniques for the Area-wide Integrated Pest Management of Native and Exotic Insect Pests	INT/5/151	29.07-13 23.08.13	Metapa de Dominguez, Chiapas, Mexico, and Guatemala City, Guatemala	IAEA

**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**

**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>36</b>	13/53	Dr. Eshani Fernando	Deputy Director, Cancer Control Programme, Colombo 05.	Training under Programme of Action for Cancer Therapy(PACT)			United States National Cancer Institute	PACT
<b>37</b>	13/53	Dr. Wasantha Dissanayake	Deputy Director, National Cancer Institute, Maharagama.	Training under Programme of Action for Cancer Therapy(PACT)			United States National Cancer Institute	PACT
<b>38</b>	13/56	Dr. D.M.P.U.K. Ralapanawa	Senior Lecturer, Department of Medicine, Faculty of Medicine, University of Peradeniya.	IAEA/RCA Regional Training Course on Functional Radionuclide Imaging in the Management of Cardiovascular Disorders	RAS/6/063	09.12.13 13.12.13	Mumbai, India	IAEA
<b>39</b>	13/56	Dr. P.P. Priyadarshan	Consultant Cardiologist, National Hospital of Sri Lanka.	IAEA/RCA Regional Training Course on Functional Radionuclide Imaging in the Management of Cardiovascular Disorders	RAS/6/063	09.12.13 13.12.13	Mumbai, India	IAEA
<b>40</b>	13/56	Dr. M.D. Samarasinghe	Consultant Cardiologist, Lady Ridgeway Hospital for Children, Colombo 08.	IAEA/RCA Regional Training Course on Functional Radionuclide Imaging in the Management of Cardiovascular Disorders	RAS/6/063	09.12.13 13.12.13	Mumbai, India	IAEA

**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**  
**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>41</b>	13/57	Mr. C. Weerasekera	Engineering Manager (Inspection), Ceylon Petroleum Corporation, Refinery Division, 11, Kelaniya.	IAEA/RCA Regional Meeting on RTD-CFD for Radiotracer Applications in Multi-Phase Reactors	RAS/1/012	19.08.13 23.08.13	Xian, China	IAEA
<b>42</b>	13/60	Mr. A. Arulkanthan	Head, Dept. of Veterinary Pathobiology, Faculty of Veterinary Medicine & Animal Science, University of Peradeniya.	IAEA Regional Training Course on Risk Analysis for Trans-boundary Animal Diseases	RAS/5/060	10.06.13 14.06.13	Bogar, Indonesia	IAEA
<b>43</b>	13/62	Dr. W.S. Dissanayake	Deputy Director, National Cancer Institute, Maharagama.	Regional Training Course on “Modular Design of Processing and Storage Facilities for Small Volumes of Low and Intermediate Level Radioactive Wastes including Disused Sealed Sources”,	RAS/9/071	30.09.13 04.10.13	Tangerang Selatan, Indonesia.	IAEA

**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**

**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>44</b>	13/63	Mr. M.B.S. Samarasekera	Chief Engineer (Gen. Planning), Ceylon Electricity Board, P.O. Box 540, No. 50, Sir Chittampalam A Gardinar Mw., Colombo 02.	Regional Meeting on Stakeholder Involvement for Countries Embarking on Nuclear Power Programmes	RAS/2/016	24.06.13 27.06.13	Amman, Jordan	IAEA
<b>45</b>	13/64	Dr. S.A. Eranga Abeyratne	Veterinary Research Officer, Veterinary Research Institute, Dept. of Animal Production & Health, P.O. Box 13, Peradeniya.	IAEA Regional Training Course on the Rapid and Confirmatory Diagnosis of Avian Influenza H7N9	RAS/5/060	09.09.13 20.09.13	Seibersdorf, Austria	IAEA
<b>46</b>	13/64	Dr. C.G.U.A. Patabendige	Consultant Microbiologist, National Hospital of Sri Lanka, Colombo.	IAEA Regional Training Course on the Rapid and Confirmatory Diagnosis of Avian Influenza H7N9	RAS/5/060	09.09.13 20.09.13	Seibersdorf, Austria	IAEA
<b>47</b>	13/72	Dr. M.P. Deeyamulla	Senior Lecturer, Department of Chemistry, University Of Kelaniya.	Regional Training Course on Interpretation and Statistical Analysis of Nuclear and Isotopic Data in Addressing Climate Change Issues	RAS/7/024	26.08.13 30.08.13	Kuala Lumpur, Malaysia	IAEA



**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**

**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>48</b>	13/74	Mr. R.N.R. Jayaratne	Assistant Director (Laboratory), Central Environmental Authority, Densil Kobbekaduwa Mawatha, Battaramulla.	Regional Training Courses of RCA/UNDP Project on Electron Beam Applications for Value Addition to Food and Industrial Products in the Asia Pacific Region		19/08/13 23/08/13	Jeongup, Korea	RCA/UNDP
<b>49</b>	13/75	Ms. J.C.G. Dissanayakege	Electrical Engineer, Lighting Sri Lanka Hambantota Project, Ceylon Electricity Board, Tangalle.	Nuclear Safety Seminar - 2013 Nuclear Energy Administration Course Reactor Plant Safety Course		11.11.13 06.12.13	Japan	MEXT WERC
<b>50</b>	13/76	Dr. (Ms.) S.P. Weerasinghe	Consultant Clinical Oncologist, National Cancer Institute, Maharagama.	IAEA/RCA Regional Training Course on Clinical Application of Stereotactic Body Radiation Therapy (SBRT)	RAS/6/065	02.12.13 06.12.23	Seoul, Republic of Korea.	IAEA
<b>51</b>	13/76	Mr. P.D.A. Fernando	Medical Physicist, National Cancer Institute, Maharagama.	IAEA/RCA Regional Training Course on Clinical Application of Stereotactic Body Radiation Therapy (SBRT)	RAS/6/065	02.12.13 06.12.23	Seoul, Republic of Korea.	IAEA

**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**

**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>52</b>	13/77	Ms. Thushara de Silva	Electrical Engineer, Ceylon Electricity Board, 5th Floor, P.O. Box 540, Sir Chittampalam A. Gardiner Mw., Colombo 02.	Training Meeting/Workshop for Teacher Training on the IAEA's Analytical Tools for Elaborating Sustainable Energy Strategies		12.08.13 23.08.13	Stockholm, Sweden	IAEA
<b>53</b>	13/78	Dr. Prasad Abeysinghe	Consultant Radiologist, National Cancer Institute, Maharagama.	Regional Training Course on "Nuclear Oncology for Nuclear Medicine Specialists"	RAS/6/067	02.09.13 06.09.13	Amman, Jordan.	IAEA
<b>54</b>	13/80	Ms. N.R.N. Silva	Research Officer, Horticultural Crops Research and Development Institute, Gannoruwa, Peradeniya.	Technical Meeting to Exchange Expertise in Mutation Breeding and Best Fit Soil and Water Management Practices	RAS/6/056	13.08.13 16.08.13	Ulaanbataar, Mongolia	IAEA
<b>55</b>	13/80	Ms. E.R.S.P. Edirimanna	Research Officer, Fruit Crops Research & Development Station, Gannoruwa, Peradeniya.	Technical Meeting to Exchange Expertise in Mutation Breeding and Best Fit Soil and Water Management Practices	RAS/6/056	13.08.13 16.08.13	Ulaanbataar, Mongolia	IAEA

**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**

**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>56</b>	13/85	Mrs. W.M.K.B. Wahundeniya	HORDI, Gannoruwa, Peradeniya	IAEA/RCA Regional Executive Meeting for End-user and Policy Makers on Radiation Grafting	RAS/1/014	11.11.13 15.11.13	Jeongup, Korea	IAEA
<b>57</b>	13/85	Prof.Janitha A. Liyanage	AEA Board member.	IAEA/RCA Regional Executive Meeting for End-user and Policy Makers on Radiation Grafting	RAS/1/014	11.11.13 15.11.13	Jeongup, Korea	IAEA
<b>58</b>	13/86	Mr.W.O.C Jagath Krishantha	Medical Physicist, Teaching Hospital, Anuradhapura.	Technical Meeting on “Harmonizing Quality Audit in Radiotherapy and Promoting the Concept of Audit in Member States”	RAS/6/070	16.12.13 18.12.13	Vienna, Austria	IAEA
<b>59</b>	13/88	Dr. Aruna Pallewatta	Consultant Radiologist, National Hospital of Sri Lanka, Colombo.	Regional Meeting on Examination Protocols for Optimization of Patient Protections	RAS/9/065	04.11.13 08.11.13	Vienna, Austria	IAEA
<b>60</b>	13/88	Mr. S.J. Samarasinghe	Supt. Radiographer, National Hospital of Sri Lanka, Colombo	Regional Meeting on Examination Protocols for Optimization of Patient Protections	RAS/9/065	04.11.13 08.11.13	Vienna, Austria	IAEA

**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**

**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>61</b>	13/89	Dr. N.D. Subasinghe	Senior Research Fellow, Institute of Fundamental Studies, Peradeniya.	Regional Training Course on Measurement Protocols for National Radon Strategies”	RAS/9/069	09.09.13 13.09.13	Bangkok, Thailand	IAEA
<b>62</b>	13/91	Mrs. H.V.R. Samanthika	Medical Physicist, National Cancer Institute, Maharagama.	Regional Training Course on Basic Concepts of 3D Image-Guided Brachytherapy for Cervical Cancer	RAS/6/062	07.10.13 11.10.13	Chiang Mai, Thailand	IAEA
<b>63</b>	13/93	Mrs. Ramya Pitipanaarachchi	Research Scientist, Industrial Technology Institute, 363, Bauddhaloka Mawatha, Colombo 07.	IAEA/RCA Executive Management Meeting on Best Practices for Sanitary Applications of Irradiation as a Sanitary Treatment	RAS/5/057	28.10.13 31.10.13	Kuala Lumpur, Malaysia.	IAEA
<b>64</b>	13/94	Mr. K.G.S. Senevirathne	Research Officer, Fruit Crops Research & Development Station, Gannoruwa, Peradeniya.	IAEA/RCA Regional Training Course on Use of Nuclear and Isotopic Techniques in Assessment of Fertilizer and Water Use Efficiency	RAS/5/056	23.09.13 27.09.13	Manila, The Philippines	IAEA
<b>65</b>	13/95	Ms. U.I.P. Perera	Research Officer, Grain Legumes & Oil Crops Research & Development Centre, Angunakolapelessa.	IAEA/RCA Regional Training Course on Application of New Mutagenesis Techniques in Crop Plants	RAS/5/056	28.10.13 01.11.13	Beijing, China	IAEA

**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**

**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>66</b>	13/95	Ms. M.G.S.P. Pathirana	Research Officer, Field Crops Research & Development Institute, Mahailluppallama.	IAEA/RCA Regional Training Course on Application of New Mutagenesis Techniques in Crop Plants	RAS/5/056	28.10.13 01.11.13	Beijing, China	IAEA
<b>67</b>	13/98	Prof. W. Abeyewickreme	AEA Board member.	Final Coordination and Consultative Meeting	RAF/5/065	02.12.13 06.12.13	Reduit, Mauritius	IAEA
<b>68</b>	13/102	Dr.(Ms) K.G. Pathirana	Consultant Radiologist, Lady Ridgeway Hospital for Children, Colombo 08	Regional Training Course on Strengthening Justification in Diagnostic Imaging for Patients in the Asia and the Pacific Region.		14.10.13 16.10.13	Seoul, Republic of Korea	IAEA
<b>69</b>	13/104	Mr.N.M.M.S Ratnayake	Nuclear Medicine Technologist, University of Peradeniya, Peradeniya.	Workshop on Quality Management Audits in Nuclear Medicine Practices (QUANUM) for Europe and Asia and the Pacific Region		16.12.13 20.12.13	Singapore	IAEA
<b>70</b>	13/104	Mrs. Sulari Colombage	Medical Physicist, National Hospital of Sri Lanka, Colombo.	Workshop on Quality Management Audits in Nuclear Medicine Practices (QUANUM) for Europe and Asia and the Pacific Region		16.12.13 20.12.12	Singapore	IAEA

**Participation of Other Officials in Foreign Seminars / Training Programmes / Workshops / Meetings**

**January - December 2013**

<b>Se. No.</b>	<b>File No.</b>	<b>Name of Officer</b>	<b>Post</b>	<b>Field of training courses/ Seminars/Workshops/ Meetings</b>	<b>Project NO.</b>	<b>Duration</b>	<b>Country</b>	<b>Sponsoring Institute</b>
<b>71</b>	13/107	Dr. P.L.S. Jayawardana	Consultant Clinical Oncologist, National Cancer Institute, Maharagama.	Regional Training Course on Overview of 3D-CRT and Site Specific Radiotherapy Planning	RAS/6/053	04.11.13 08.11.13	Kuala Lumpur, Malaysia	IAEA
<b>72</b>	13/107	Mr. S.H.Upul	Medical Physicist, National Cancer Institute, Maharagama.	Regional Training Course on Overview of 3D-CRT and Site Specific Radiotherapy Planning	RAS/6/053	04.11.13 08.11.13	Kuala Lumpur, Malaysia	IAEA
<b>73</b>	13/108	Mr. M.B.S. Samarasekera	Chief Engineer (Gen. Planning), Ceylon Electricity Board, P.O. Box 540, No. 50, Sir Chittampalam A Gardinar Mw., Colombo 02.	Regional Meeting on Management of Nuclear Power Plant Projects (621-15-TM-44715)		28.10.13 01.11.13	Hanoi, Vietnam.	IAEA
<b>74</b>	13/110	Mr. K.L.R.C. Wijesinghe	Assistant Director, Ministry of Power & Energy, Colombo 07.	Meeting on Establishment of a Process Based Management System	RAS/2/016	02.12.13 06.12.13	Yogyakarta, Indonesia	IAEA

**AEA Expert Assistance**  
**January – December 2013**

	<b>Project No. &amp; Title</b>	<b>Name and Nationality</b>	<b>Field of Specialty</b>	<b>Institution</b>	<b>Duration</b>
1	SRL/2/008 Supporting Energy Planning and a Pre-Feasibility Study for Nuclear Power and Human Resources Development in Nuclear Power Engineering	Muhammad Imtiaz, Pakistan	Support for hands-on group training on energy demand modeling	Ceylon Electricity Board	28.01.2013 08.02.2013
2	SRL/2/008 Supporting Energy Planning and a Pre-Feasibility Study for Nuclear Power and Human Resources Development in Nuclear Power Engineering	Dr. Sujit Kumar Samaddar, USA	Project Management and Review	Ceylon Electricity Board	11.03.2013 13.03.2013
3		Mr. Oscar Acuna, Head, Asia and the Pacific Section, Dept. of Technical Cooperation, International Atomic Energy Agency, Vienna, Austria	Workshop to Evaluate and Monitor on going TC Activities, To Develop Cooperation with National Institutions participating in IAEA TC Activities and also to Develop Bilateral Cooperation with Development Stake Holders and Partners	Mr. H.G.P. Karunaratne, Senior Deputy Director, International Cooperation Division, AEA.	11.03.2013 13.03.2013
4	SRL/2/009	Mr. Peter Horace Woods, Australian	Project Management and Review	Mr. W.K.B. Nihal Prame, Deputy Director, Geological Survey and Mines Bureau (GSMB).	04.02.2013 06.02.2013
5	SRL/2/009	Mr. Andrew Thomas Bisset, Australian	to provide expert advice on radiometric mapping including GIS techniques	Mr. W.K.B. Nihal Prame, Deputy Director, Geological Survey and Mines Bureau(GSMB).	23.09.2013 27.09.2013

**AEA Expert Assistance**  
**January – December 2013**

	<b>Project No. &amp; Title</b>	<b>Name and Nationality</b>	<b>Field of Specialty</b>	<b>Institution</b>	<b>Duration</b>
6	SRL/2/009	Mr. ALok Porwal, Indian	to provide expert advice on radiometric mapping including GIS techniques	Mr. W.K.B. Nihal Prame, Deputy Director, Geological Survey and Mines Bureau (GSMB).	23.09.2013 27.09.2013
7	SRL/5/043	Ms. Iwona Monika Kaluska, Poland	Assist counterpart in holding a workshop on Applications of MGIF in Sri Lanka	Mrs. S.S. Kulatunge, Senior Deputy Director, MGIF, AEA.	14.01.2013 18.01.2013
8	SRL/5/043	Mr. Manfred Frenzel, GFR	Advise on Cold Commissioning of the MGIF	Mrs. S.S. Kulatunge, Senior Deputy Director, MGIF, AEA.	01.07.2013 05.07.2013
9	SRL/1/007	Mr. Uwe Zscherpel, GFR	Training Course and National Seminar on Digital Radiography	Mr. T.M.R. Tennakoon, Senior Deputy Director / Project Director, NCNDT, AEA	08.04.2013 12.04.2013
10	RAS/5/055	Prof.. Yong Li (CRP)	To advice on an enhancing counterparts' ability in soil sampling to assess soil degradation and interpretation of previous 137Cs data.	Mrs. D.C.K.K. Kulatunge, Senior Scientific Officer, Life Science Division, AEA	07.01.2013 11.01.2013
11	RAS/1/014	Mr. Olgum Guven (Turkish)	to provide expert service to introduce radiation-induced grafting which is currently being implemented at Atomic Energy Authority	Mrs. A.K. Ratnayake, Deputy Director, Radiation Processing Section, AEA.	09.12.2013 13.12.2013
12	SRL5044	Ms. Rosemary Susan LEES (British)	review the progress of the National TC Project SRL5044	Ms. R.D. Jeevani Harischchandra, Entomologist, Anti Malaria Campaign.	09.12.2013 13.12.2013
13	CHOGM	Mr. Dodane, Yannick Michel Robert (Austria)	train local security personnel and Scientific Officers of Atomic Energy Authority (AEA) for the provision of Nuclear Security for the forthcoming CHOGAM conference in Sri Lanka, in November 2013	Mr. A. Jayalath, Deputy Director, Radiation Protection & Regulations, AEA.	07.10.2013 11.10.2013



**AEA Expert Assistance**  
**January – December 2013**

	<b>Project No. &amp; Title</b>	<b>Name and Nationality</b>	<b>Field of Specialty</b>	<b>Institution</b>	<b>Duration</b>
14	CHOGM	Mr. Christoph Simson (Germany)	provide an expert mission on technical service training on TLD Readers equipment in Sri Lanka	Mr. A. Jayalath, Deputy Director, Radiation Protection & Regulations, AEA.	22.09.2013 27.09.2013
15	SRL/5/043	Mr. Manfred Frenzel, GFR	Radiation Safety Inspection of the Commissioned Gamma Radiation Safety in Radiation Safety.	Mrs. S.S. Kulatunge, Senior Deputy Director, MGIF, AEA.	21.10.2013 01.11.2013
16	RAS/7/023	Mr. Dariusz Wegrzynek, Poland	To Establish the EDXRF with the secondary targets (Al, Ca, Ti, Fe and Zr) in the air analysis	Mrs. H.M.N.L. Handagiripathira, Senior Scientific Officer, Life Science Division, AEA	07.01.2013 09.01.2013
17	RAS/6/064 Building Capacity with Distance Assisted Training for Nuclear Medicine Professionals	Dr. Brian Hutton / UCL/London / UK	Finalize the participants about the DATOL Training Website use and National Programme Management.	Dr. L. Watawana, Senior Lecturer, Nuclear Medicine Unit, Faculty of Medicine, University of Peradeniya.	14.03.2013 17.03.2013
18	RAS/6/064 Building Capacity with Distance Assisted Training for Nuclear Medicine Professionals	Ms. Heather Patterson / ANSTO/ Australia	Finalize the participants about the DATOL Training Website use and National Programme Management.	Dr. L. Watawana, Senior Lecturer, Nuclear Medicine Unit, Faculty of Medicine, University of Peradeniya.	14.03.2013 17.03.2013
19		Mr. Munim Awais, Programme Management Officer, IAEA	Workshop to Create Broader Awareness Among Our Scientific Officers, Executive Officers and National Project Counterparts in the field of project planning	Mr. H.G.P. Karunaratne, Senior Deputy Director, International Cooperation Division, AEA.	23.09.2013 27.09.2013

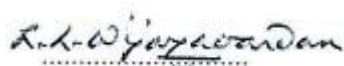
# **FINANCIAL STATEMENTS 2013**

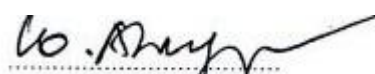
**ATOMIC ENERGY AUTHORITY**


**ATOMIC ENERGY AUTHORITY  
STATEMENT OF FINANCIAL POSITION  
AS AT DECEMBER 31-2013**

	Notes	2013 Rs.	Value in Rs. 2012 Rs.
<b><u>ASSETS</u></b>			
<b><u>Current Assets</u></b>			
Cash and Cash equivalent	3	5,924,164	512,524
Receivables	4	49,832,988	11,735,965
Inventories	5	3,987,907	3,592,254
Prepayments	6	2,030,977	3,381,265
Other Current Assets	7	53,076,778	114,852,814
			25,710,672
			44,932,680
<b><u>Non - Current Assets</u></b>			
Work In Progress	8	172,261,327	56,715,006
R & D On-Going Projects	9	312,431	6,045,787
Property, Plant & Equipment	10	145,876,359	150,171,229
Land & Building	11	175,344,554	177,195,275
Other Long Term Assets	12	9,490,246	9,490,246
Unusable Items	13	31,850	31,850
		<u>503,316,766</u>	<u>399,576,892</u>
		<b>618,169,581</b>	<b>444,509,572</b>
<b>Total Assets</b>			
<b><u>LIABILITIES</u></b>			
<b><u>Current Liabilities</u></b>			
Payable	14	(35,777,863)	(16,305,166)
<b><u>Non Current Liabilities</u></b>			
Retirement Benefit Obligations	15	(23,352,994)	(21,541,848)
		<u>(59,130,857)</u>	<u>(37,847,014)</u>
		<b>(59,130,857)</b>	<b>(37,847,014)</b>
<b>Total Liabilities</b>			
		<u>559,038,724</u>	<u>406,662,557</u>
<b>Total Net Assets</b>			
<b><u>NET ASSETS /EQUITY</u></b>			
<b><u>Capital &amp; Reserves</u></b>			
Government Grant - Capital	16	564,854,508	386,512,677
Accumulated Fund	17	87,947,490	91,692,087
Deficit	18	(93,763,275)	(71,542,207)
		<u>559,038,724</u>	<u>406,662,557</u>
		<b>559,038,724</b>	<b>406,662,557</b>
<b>Total Net Assets/Equity</b>			

The Board of Directors is responsible for the preparation and presentation of these Financial Statements, the Accounting Policies and notes and integral part of these Financial Statements.

  
Chairman

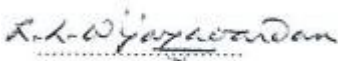
  
Board Member

  
Actg. Senior Deputy Director  
Finance & Supply

**ATOMIC ENERGY AUTHORITY**  
**STATEMENT OF FINANCIAL PERFORMANCE**  
**FOR THE YEAR ENDED DECEMBER 31 -2013**

**Value in Rs.**

	<b>Notes</b>	<b>2013 Rs.</b>	<b>2012 Rs.</b>
Revenue	<b>19</b>	130,397,911	128,536,180
Other Revenue	<b>20</b>	1,151,057	1,072,784
<b>Total Revenue</b>		131,548,968	129,608,964
Wages, Salaries and Employee Benefits	<b>21</b>	(68,378,919)	(63,666,996)
Supplies & Consumables Used	<b>22</b>	(7,994,543)	(8,213,588)
Depreciation & Amortization Expenditure	<b>23</b>	(33,828,656)	(31,711,770)
Impairment of property, plant & equipment	<b>24</b>	(5,581,887)	(8,181,196)
Other Recurrent Expenditure	<b>25</b>	(30,916,539)	(27,956,711)
Finance cost	<b>26</b>	(25,367)	(29,055)
<b>Total Expenditure</b>		(146,725,910)	(139,759,316)
<b>Deficit for the year</b>		<b>(15,176,943)</b>	<b>(10,150,352)</b>

  
Chairman

  
Board Member

  
Actg. Senior Deputy Director  
Finance & Supply

**ATOMIC ENERGY AUTHORITY**  
**Statement of Changers in Net Assets /Equity**  
**For the year ended December 31 2013**

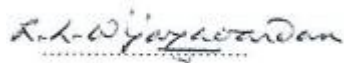
	<b>Capital Grant</b>	<b>Accumulated Fund</b>	<b>Accumulated Surp/Deficit</b>	<b>Value in Rs. Total</b>
<b>Balance at 31- December 2011</b>	<b>296,442,664</b>	<b>88,268,268</b>	<b>(60,544,231)</b>	<b>324,166,701</b>
Changes in accounting policy	20,425,000		(140,431)	20,284,569
<b>Restated Balance</b>	<b>316,867,664</b>		<b>(60,684,662)</b>	<b>344,451,270</b>
Received for the Year	91,908,533	12,872,050		104,780,583
Adjustments Made -	(22,263,520)	(9,448,231)	(707,192)	(32,418,943)
Surplus/ Deficit for the Year			(10,150,353)	(10,150,353)
<b>Balance at 31- December 2012</b>	<b><u>386,512,677</u></b>	<b><u>91,692,087</u></b>	<b><u>(71,542,207)</u></b>	<b><u>406,662,557</u></b>
Changes in accounting policy	(1,308,533)			(1,308,533)
<b>Restated Balance</b>	<b>385,204,144</b>		<b>(71,542,207)</b>	<b>313,661,937</b>
Received for the Year	204,063,138	5,845,478		209,908,616
Adjustments Made	(24,412,775)	(9,590,075)	(7,044,125.00)	(41,046,975)
Surplus/ Deficit for the Year			(15,176,943)	(15,176,943)
<b>Balance at 31- December 2013</b>	<b><u>564,854,508</u></b>	<b><u>87,947,490</u></b>	<b><u>(93,763,275)</u></b>	<b><u>559,038,724</u></b>

# ATOMIC ENERGY AUTHORITY


## Consolidated Cash Flow statement for the Year Ended 31-December 2013

Value in Rs.

	2013	2012
<b><u>CASH FLOW FROM OPERATING ACTIVITIES</u></b>		
-		
<b><u>Receipts</u></b>		
Sales of goods and services	71,738,000	66,486,000
Receipt of Recurrent Grant	43,000,000	39,987,000
Receipt of Loan Interest	258,757	273,886
<b><u>Payments</u></b>		
Employee Cost	(63,446,000)	(55,657,000)
Suppliers	(53,817,835)	(54,018,176)
Other Payments	(313,000)	(337,000)
<b>Net Cash Flow from Operating Activities</b>	<b>(2,580,078)</b>	<b>(3,265,290)</b>
<b><u>CASH FLOW FROM INVESTING ACTIVITIES</u></b>		
Receipt of Capital Grant	201,964,000	101,925,000
Acquisition of Plant, Machinery & Equipment	(194,009,500)	(103,237,644)
Computer (purchased out of income)	(307,500)	
Sale of Vehicle		1,847,804
Funds Transfer to the Treasury	-	(1,847,803)
<b>Net Cash Flow from Investing Activities</b>	<b>7,647,000</b>	<b>(1,312,643)</b>
<b><u>CASH FLOW FROM FINANCIAL ACTIVITIES</u></b>		
Recovery of Loans	3,343,243	3,494,114
Payment of Loans	(3,008,000)	(2,627,000)
<b>Net Cash Flow from Financial Activities</b>	<b>335,243</b>	<b>867,114</b>
<b>Net Increase/Decrease in Cash &amp; Cash equivalent</b>	<b>5,402,165</b>	<b>(3,710,819)</b>
<b>Cash &amp; Cash equivalent at the beginning of the year</b>	<b>512,524</b>	<b>4,209,792</b>
Cash at Bank	496,180	4,207,000
Stamp Stock	16,344	2,792
<b>Cash &amp; Cash equivalent at the end of the year</b>	<b>5,924,164</b>	<b>512,524</b>
Cash at Bank	5,898,345	496,180
Stamp Stock	25,819	16,344

  
Chairman

  
Board Member

  
Actg. Senior Deputy Director  
Finance & Supply

# **ATOMIC ENERGY AUTHORITY**

## **Notes to the Accounts**

### **1 SIGNIFICANT ACCOUNTING POLICIES**

#### **1.1 General**

##### **1.1.1 Basis of Preparation**

The statement of financial position at 31.12.2013 and the related financial statements have been prepared on the historical cost convention, in accordance with generally accepted Accounting Principles applied and adopting accrual concept on a consistent basis in conformity with Sri Lanka Public Sector Accounting Standards.

##### **1.1.2 Comparative Information**

The Authority has constantly applied the accounting practices with those used in the previous year's figures and phrases have been re arranged where ever necessary to confirm to the current year's presentation.

##### **1.1.3 Changes in Accounting Policies**

Accounting policies adopted are consistence with these in the previous financial year.

##### **1.1.4 Foreign Currency Transactions**

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

##### **1.1.5 Events Occurring after the Reporting Date**

Consumable items amounting to Rs.867,552 purchases during 1980/1986 had been erroneously accounted as Radiation facility" under noncurrent assets. This error was rectified with the approval of the Board of management in the year 2014 and made due adjustments in the 2013 financial statements. However further amount of Rs.214,308 remained under this heading due to unavailability of records. Action will be taken to rectify this completely during the year 2014.

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

### **1.1.6 Taxes**

Authority used to collect VAT which was applicable for the period from their customers. Policy on VAT applicable to the Authority was changed with effect from the year 2008. Accordingly, the allowable input tax component was calculated considering the ratio between internally generated income and the grants received from the Treasury. Apart from this, the Nation Building Tax and Income Tax are paid to the Department of Inland Revenue in compliance with the prevailing rules.

## **1.2 ASSETS AND BASIS OF THEIR VALUATION**

Assets classified as current assets on the reporting date are cash and those which are expected to realize in cash, during the normal operating cycle of the Authority's business or within one year from the Reporting Date.

Assets other than current assets (non-current assets) are those which the Authority intends to hold beyond a period of one year from the statement of financial position date.

### **1.2.1 Property, Plant & Equipment**

The Property, Plant & Equipment are recorded at cost 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.

Funds for acquisition of non current assets are provided mainly by the General Treasury and International Atomic Energy Agency (IAEA).

### **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 Authority revised the accounting policy on depreciation of fixed assets with effect from 2009. Earlier the Authority applied 10% per annum as the rate of depreciation of fixed assets other than the Building and Motor vehicles. The Board of Management has decided to change the depreciation rate only for the Electronic equipment, as 25% and 33 1/3% for Computers, Software & Accessories considering their useful life.



The rate of depreciation applicable on straight line method are as follows.

Buildings	Over 50 years	02 %
Boundary Wall	Over 10 years	10 %
Office Equipment, Furniture & Fittings	Over 10 years	10 %
Electronic Equipment	Over 4 years	25 %
Computers, Software & Accessories	Over 3 years	33 1/3%
Motor Vehicles	Over 4 years	25 %
Scientific Equipment	Over 10 years	10 %
Radiation Facility	Over 10 years	10 %
Library Books	Over 10 years	10 %
Sports Equipment	Over 10 years	10 %

### **Lease Hold Asset**

The land held under long term lease is amortized over the period under lease. Atomic Energy Authority (AEA) had entered into a 99 year lease agreement with Urban Development Authority (UDA) for the land situated at 460, Baseline Road, Orugodawatta, Wellampitiya. In 1996 Atomic Energy Authority (AEA) had paid Rs. 9,750,000/- on behalf of acquiring this lease hold property. This transaction has been identified as an operating lease and shown in the statement of financial accounts accordingly

### **1.2.3 Inventories -Basis of valuation**

The cost of each category of inventory is determined on actual cost using FIFO (first in first out method).

### **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.

### **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**

#### **1.3.1 Retirement Benefits to Employees**

##### **Defined Benefit Plan**

AEA policy on contribution to EPF was changed from 12% to 15% with effect from 26-05-2011 (which is the date of COPE meeting) at the Board Meeting held on 07-12-2012 and the Authority's contribution for Employee's trust fund is 3% as per the ETF Act.

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 service. 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 and half months cost of living as at 31<sup>st</sup> December of each employee.

#### **i. TRADE AND OTHER PAYABLES**

Trade and other payables are stated at their cost

##### **a.i. Capital Commitments and Contingent Liabilities**

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

##### **a.i. Provisions**

Provisions are recognized as when the Authority 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 income statement 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 balance sheet and credited to the income statement over the useful life of the related assets and their remaining lease period following income approach.

### **Government Grant**

Government grant for recurrent & capital has been identified separately. Recurrent grant is the major income source & credited to income & 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 the Government are shown as differed income under noncurrent liability.

## **1.5 INCOME STATEMENT**

Income & Expenditure Accounts are prepared in accrual basis.

### **1.5.1 Revenue and Expenditure Recognition**

Major source of revenue is Recurrent Grant by the treasury.

#### **1.5.1.1 Income**

Income received from operating activities is comprised with net income of Regulatory Services, NDT Inspections & Training, Nuclear Instrumentation & Calibrations, Interest on Loans, Rental income, Non Refundable Deposits, Sundry income, damaged stock disposal Income, gain on disposal of assets based on accrual concept & excluding VAT.

#### **1.5.1.2 Expenditure**

Expenses are recognized in the income statement on the basis of a direct association between the cost incurred and the earning of the specific items of income where appropriate. All expenditure incurred in running of the Authority and depreciation of the property, plant & equipment has been charged to income in arriving the Income over expenditure

### **1.5.2 Accounting Policy for Research & Development Expenditure**

Research and Development costs are mainly funded by the Treasury. Income received from outside clients/organizations for research projects are credited to income statement.

## **2. CORPORATE INFORMATION**

Atomic Energy Authority (AEA) was established by the Atomic Energy Act No.19 of 1969. The AEA is located at No. 60/460, Orugodawatte, Wellampitiya.

**Notes to the Accounts**  
**As at 31-December 2013**

		<b>2013</b>	<b>2012</b>
		<b>Rs.</b>	<b>Rs.</b>
	<b><u>Current Assets</u></b>		
<b>3</b>	<b>Cash at Bank</b>		
	Ac no:071-1-001-1-3320739	5,898,345	496,180
	Stamp Stock	25,819	16,344
	Balance at the end of the year	<b>5,924,164</b>	<b>512,524</b>
<b>4</b>	<b>Receivables</b>	<b>49,832,988</b>	<b>11,735,965</b>
	<b><u>Trade Receivables</u></b>		
<b>4.1</b>	<b>Debtors</b>		
	Trade Debtors -Related to Current Year	2,248,678	2,727,327
	Trade Debtors -Related to Previous Years	2,142,742	1,877,322
<b>4.2</b>	<b>Provision for Doubtful Debts</b>	(909,576)	(979,118)
	Net Trade Debtors Amount as at 31-12-2013	<b>3,481,844</b>	<b>3,625,531</b>
	<b><u>Staff &amp; Non Trade Receivables</u></b>		
<b>4.3</b>	<b>Staff Debtors</b>	67,572	369,765
<b>4.4</b>	<b>Other debtors</b>	476,180	1,267,879
	Ministry of Science & Technology (MGIF Project)	39,773,419	98,657
		<b>40,317,170</b>	<b>1,736,301</b>
<b>4.5</b>	<b>Advances &amp; Loans</b>		
	Motor Cycle Loan	168,332	237,083
	Special Distress Loan	3,334	15,000
	Cycle Loan	20,063	33,563
	Festival Advance	88,200	64,200
	Distress Loan	5,398,321	5,681,063
	Advance to Employee	514	514
	Balance at the end of the year	<b>5,678,764</b>	<b>6,031,423</b>
<b>4.6</b>	<b>Refundable Deposits (Receivable)</b>	<b>355,210</b>	342,710
<b>5</b>	<b>Inventories</b>		
	Chemical Stock	2,090,373	273,908
	Office & Laboratory Consumable & Vehicle Spare Stock	1,415,606	1,350,995
	Laboratory Consumable stocks Identified as obsolete	397,758	397,758
	Provision for Lab Consu. stocks Identified as obsolete	(397,758)	(397,758)
	IAEA Closing stocks (Donation))	15,344	1,967,352
	Closing Stock M G I F	466,584	
	Balance at the end of the year	<b>3,987,907</b>	<b>3,592,255</b>

**Notes to the Accounts**
**As at 31-December 2013**
**6**
**Prepayments**

	<b>2013</b>	<b>2012</b>
	<b>Rs.</b>	<b>Rs.</b>
Cooling Services (PVT) Ltd.	43,137	9,003
Access International	15,634	
Sri Lanka Insurance Corporation	1,710,888	3,047,508
Metropolitan Communication Ltd	11,242	10,797.00
Motor Traffic Commissioner	9,681	16,142
Hideki International		781
Metropolitan Office (Pvt) Ltd	8,710	17,591
S.L.A.B	50,545	59,044
Brown & Co.	4,551	4,167.00
Chairman	36,450	20,000
Executive Director	27,540	18,000
National Insurance Trust Fund	44,278	61,953
Soar Technology	50,581	51,000.00
H& L Electricles	14,084	14,280.00
Wasana Guest		51,000.00
Business Machines Co	3,657	

Balance at the end of the year

**2,030,977 3,381,266**
**7**
**Other Current Assets**
**53,076,778 25,710,672**

7.1	With holding Tax Receivable	2,785	2,785
7.2	Income Tax Advance	17,158	17,158
7.3	VAT Receivable	0	26,751
7.4	I.A.E.A Receivable	0	582,712
7.5	Advance payment for scientific Equipment	38,905,871	154,823
7.6	Mobilization Advance paid to SLLRDC & NBRO	13,318,155	24,560,811
7.7	M G I F House Rent Advance	208,667	
7.8	<u>Purchasing Advance</u>		

Balance at the beginning of the year 365,633 566,767

Adjustments made for prior year (209,750)

Restated Opening Balance 365,633 357,017

Settlements (34,640,531) (354,044)

Purchasing Advance for the year 34,899,040 362,660

Balance at the end of the year

**624,142 365,633**
**8**
**Work-In-Progress**

Water Proofing work	515,283	515,283
Construction of NCNDT Payments to the SLLRDC & NBRO	171,746,043	56,199,722

Balance at the end of the year

**172,261,327 56,715,005**

**Notes to the Accounts**  
**As at 31-December 2013**

		<b>2013</b>	<b>2012</b>
		<b>Rs.</b>	<b>Rs.</b>
<b>9</b>	<b>Research &amp; Development On Going Projects</b>		-
	Water Resource Management		1,881,447
	Pre Feasibility Study on Nuclear Power Generation		832,776
	Radiation Monitoring Programme		241,628
	Y N S S		701,290
	C K D - Project- Received in Advance		
	Developing National Capability to Respond radiological Emergencies		1,584,701
	MEPA Project		770763
	Electron Beam Service Facility in Sri Lanka		<u>33,182</u>
	Isotope Hydrology Divisional		
	Broadband Hydropower Project		
	Improving Soil Fertility & Land Productivity		
	Air Pollution Project		
	Radiation processing of Natural polymers for Agriculture & environmental Application(R A S/8/1090)	312,431	
	Balance at the end of the year	<b><u>312,431</u></b>	<b><u>6,045,787</u></b>
<b>10</b>	<b><u>Property, Plant &amp; Equipment</u></b>		
	Property Plant & Equipment	145,876,359	150,171,229
<b>11</b>	<b>Land &amp; Building</b>	<u>175,344,554</u>	<u>177,195,275</u>
	Balance at the end of the year	<b><u>321,220,913</u></b>	<b><u>327,366,504</u></b>
<b>12</b>	<b>Other Long Term Assets</b>		
	Scientific Equipment received for MGIF project	9,417,746	<u>9,417,746</u>
	Developing National Capability to Respond radiological Emergencies	72,500	
		<b><u>9,490,246</u></b>	<b><u>9,417,746</u></b>
<b>13</b>	<b>Unusable Items</b>		
	Unusable Items	<b>31,850</b>	31,850
		<b><u>31,850</u></b>	<b><u>31,850</u></b>
<b>14</b>	<b>Trade Payable</b>	<b>35,777,863</b>	<b>16,305,166</b>
	Creditors & Accruals Opening Balance	14,992,506	4,499,415
	Prior Year Adjustment	-	-35195
	Re-stated Opening Balance	14,992,506	4,464,220
	Settlement during the year	(13,014,186)	(3,511,350)
	Provision for the year	31,647,748	14,039,636
	Balance at the end of the year	<b><u>33,626,068</u></b>	<b><u>14,992,506</u></b>

<b>Notes to the Accounts</b>		<b>2013</b>	<b>2012</b>
<b>As at 31-December 2013</b>		<b>Rs.</b>	<b>Rs.</b>
	Advance Income for License fees	87,254	313,500
	Advance Income for Radiation Protection	4,428	4,428
	Advance Income for Food Testing	1,270	1,270
	Over Income	52,093	46,979
	Advance received for CKD project	824,602	577,545
	Advance received for I A E A project	605,459	
	Sundry Creditors	19,838	19,838
	E PF control	1,391	
	E T F control	167	
	VAT Payable	166,943	
	Advance payment received for Rent – Polipto Co.	245,250	245,250
	Retention Money -Sumo Engineering (PVT) Ltd.	0	12,250
	Refundable deposit Payable	143,100	91,600
<b>15</b>	<b>Retirement Benefit Obligations</b>		
	Balance at the beginning of the year	21,541,848	15,434,480
	Cash Paid	(821,385)	(129,881)
	Add : Provision for the year	2,632,530	6,237,248
	Balance at the end of the year	23,352,993	21,541,847
	<b><u>Capital &amp; Reserves</u></b>		
<b>16</b>	<b>Capital Grant</b>		
	Balance at the beginning of the year	386,512,677	296,442,664
	Prior Year Adjustment for Grant Received	-1,308,533	20,425,000
	<b>Opening Balance after the LKAS Adjustments</b>	<b>385,204,144</b>	<b>316,867,664</b>
	Capital Grant Received for the year	202,272,147	90,600,000
	Grant Received for Clearing of Donation	1,790,991	1,308,533
	Application of LKAS 20 relevant to current year	(24,412,775)	(22,263,520)
	Balance at the end of the year	564,854,508	386,512,677
<b>17</b>	<b>Accumulated Fund</b>		
	Balance at the beginning of the year	91,692,087	88,268,268
	<b>Opening Balance after the LKAS Adjustments</b>	<b>91,692,087</b>	<b>88,268,268</b>
	Application of LKAS20 relevant to current year	(9,590,075)	(9,448,231)
	Donations Received for the Year	5,845,478	12,872,050
	Balance at the end of the year	87,947,490	91,692,087
<b>18</b>	<b>Deficit</b>		
	Balance at the beginning of the year	(71,542,207)	(60,544,231)
	Prior Year adjustments		(140,431)
	<b>Re stated Opening balance</b>	<b>(71,542,207)</b>	<b>(60,684,662)</b>
	Adjustments A/C	(7,044,125)	(707,192)
	Surplus/Deficit for the year	(15,176,943)	(10,150,353)
	Balance at the end of the year	(93,763,275)	(71,542,207)

**Notes to the Accounts****As at 31-December 2013****19 Revenue**

	<b>2013</b>	<b>2012</b>
	<b>Rs.</b>	<b>Rs.</b>
Government Grant- Recurrent	43,069,794	39,987,000
Differed Revenue	33,695,350	31,711,770
Food Testing	35,185,948	32,205,618
Food Testing (HPGE Method)	141,340	126,800
NDT Inspection Services	4,881,407	7,743,027
Licensee Fees	3,834,966	4,064,466
Radiation Protection Services	4,552,533	7,400,653
Nuclear Analytical	29,430	209,934
General Scientific Services	1,712,934	1,560,818
NDT Training Courses	3,078,340	3,252,800
Amendment Charges	15,805	37,578
stable Istope Analyisi	86,670	-
Radiation Processing Services	113,393	235,716
	<b>130,397,911</b>	<b>128,536,180</b>

**20 Other Revenue**

Interest on Loan	258,757	273,886
Miscellaneous Income	238,300	706,226
Rental Income	654,000	
Consumable received as Donation	-	75,456
Disposal of assets	-	17,216
	<b>1,151,057</b>	<b>1,072,784</b>

**21 Wages, Salaries and Employee Benefits**

Salaries	36,331,162	34,568,750
NCNDT Salary	571,320	452,816
Employees Provident Fund	5,455,959	4,152,484
NCNDT EPF	85,398	54,338
Employees Trust Fund	1,092,424	1,038,085
NCNDT ETF	17,140	13,584
Additional Allowances	6,510,410	4,958,858
Interim Allowances	34,308	34,308
Over Time& Holiday payments	1,078,233	1,322,476
Gratuity- for the Year	2,651,853	6,121,799
Encasement of Medical leave	2,024,616	1,819,162
Incentive	1,033,782	735,796
Cost of living	9,889,904	7,472,384
NCNDT COL	58,071	51,606
Trainee Allowance	62,000	195,550
Fuel Allowance	578,940	
Consultant Allowance	903,400	675,000
	<b>68,378,919</b>	<b>63,666,996</b>



## Notes to the Accounts

2013

2012

As at 31-December 2013

Rs.

Rs.

**22 Supplies & Consumable Used**

Fuel & lubricants	1,418,636	1,565,479
Office Consumables & Stationary	2,640,010	2,163,617
Laboratory Consumables	3,666,185	4,211,010
Laboratory Consumable Donation	70,711	86,365
Uniforms	199,001	187,119
	<b>7,994,543</b>	<b>8,213,588</b>

**23 Depreciation /Amortization of Asset**

Amortization (Lease Rent)	98,485	98,485
Depreciation on Acquisition of Assets	24,140,096	22,165,054
Depreciation on IAEA Donations	9,590,075	9,448,231
	<b>33,828,656</b>	<b>31,711,770</b>

**24 Impairment of property, plant & equipment**

Maintenance of Office Building	2,310,764	2,482,027
Service & Repairs of Equipment	1,329,007	4,422,976
Maintenance of Motor vehicle	1,942,116	1,276,193
	<b>5,581,887</b>	<b>8,181,196</b>

**25 Other Recurrent Expenditure**

Remuneration for Authority Memb.	381,030	354,550
Training Programmes ,Seminars	2,759,601	1,661,796
Staff Local Training Programmes	824,315	1,029,099
Exhibitions	1,031,834	1,438,513
Subs. fees for Local and Foreign Membership	6,000	56,061
Incidental Expenses for Scientist	321,673	150,486
Entertainment	136,489	92,086
Advertisement & publicity	1,256,113	832,847
Subscript. for Newspapers	40,640	43,805
Printing & Publications	247,365	92,856
Welfare Services	267,351	383,831
Audit Fees	225,000	200,000
Miscellaneous Expenses	177,234	86,256
Payment for N.D.T Training Course	865,807	908,884
Payment for Radiation Protection	305,105	802,778
Payment for Inspection	741,612	995,352
Payment for Life Science Division	577,580	606,685
Payment for General Scientific Division	47,365	42,972
Payment for Radiation Processing Division	1,838	4,457
Research & Development Projects	241,616	576,529
Agriculture project	201,096	376,868
Stamp Duty	7,375	8,625
Nation Building Tax	768,671	867,591
Doubtful Debtors	76,768	823,124
Obsolete Stock (Lab. Consumable Items)		397,758

**Notes to the Accounts**
**As at 31-December 2013**

	<b>2013</b>	<b>2012</b>
	<b>Rs.</b>	<b>Rs.</b>
cont.....	11,509,477	12,833,809
Loss on disposal of unusable assets	1,046,295	
Office Traveling	176,787	276,305
RCA Meeting	230,099	398,745
IAEA General Conference	1,291,093	1,674,453
Traveling for Authority Members	63,183	45,250.00
Clearing charges	109,691	56,443
Electricity	5,545,005	4,218,496
Water	325,427	288,098
Telephone	730,193	642,079
Telex , Fax & E-Mail	320,475	610,560
Postage	273,369	286,317
Security	3,008,320	3,055,982
Insurance	4,054,250	2,493,835
Transportation	785,916	665,886
Rates	324,000	324,000
Legal Expenses	459,550	86,350
Ground Rent	102	102
Y N S S Project	56,698	
Radiation Monitoring Programme	160,259	
Water Resource Management	46,504	
Developing National Capability to Respond to radiological Emergencies	24,252	
MEPA Project	37,681	
Air Pollution Project	15,781	
Improving Soil Fertility Land Productivity	121,041	
Isotope Hydrology Division	175,355	
Broadland Hydropower Project	25,736	
	<b><u>30,916,539</u></b>	<b><u>27,956,710</u></b>

**26 Finance cost**

Bank Charges	25,367	29,055
	<b><u>25,367</u></b>	<b><u>29,055</u></b>

**Property Plant & Equipment – Note No 10**

**Tangible Assets Note**

<b>Lease Hold Assets</b>	<b>Note- 10.1</b>	<b>Life of</b>		<b>Adjustment</b>	<b>Re-stated</b>	<b>Additions/</b>		<b>Disp/Tran</b>	<b>Balance as</b>
<b>Cost</b>		<b>the Asset</b>	<b>01/01/2013</b>	<b>Made</b>	<b>Opening</b>	<b>Transfers</b>	<b>Disposal</b>	<b>out Adjust</b>	<b>at31.12.2013</b>
Land		99	8,141,412						<b>8,141,412</b>
Land			8,141,412		8141412				<b>8,141,412</b>
			<b>8,141,412</b>			<b>-</b>		<b>-</b>	<b>8,141,412</b>

**Owned Assets Note- 10.2**

**Land & Building**

NCNDT-Land			90,884,994		90,884,994				<b>90,884,994</b>
Office Building		50	78,168,869	18,606,443	96,775,312	186,995			<b>96,962,307</b>
			<b>169,053,863</b>		<b>187,660,306</b>	<b>186,995</b>		<b>-</b>	<b>187,847,301</b>

**Property, Plant & Equ.**

Boundary Wall		10	1	2,876,475	2,876,476				<b>2,876,476</b>
Scientific Equipment		10	89,372,171	61,700,777	151,072,948	16,476,755			<b>167,549,703</b>
Scientific Equipment donation		10	60,878,741	66,621,686	127,500,427	6,307,086	(7,537,082)		<b>126,270,431</b>
Office Equip/ Furn & Fitti.		10	9,673,112	6,512,934	16,186,046	2,216,648	(2,367)		<b>18,400,327</b>
Other Equipment		10	449,717	862,955	1,312,672				<b>1,312,672</b>
Motor Vehicle		4	16,449,938	15,909,019	32,358,957		(1,335,851)		<b>31,023,106</b>
Radiation facility		10	867,552		867,552		(653,235)		<b>214,317</b>
Library Books		10	1,423,982	197,833	1,621,815	11,580	(16,353)		<b>1,617,042</b>
Computer items & software package		3	3,171,250	10,709,832	13,881,081	2,203,330			<b>16,084,411</b>
Electronic Items		4	2,795,834	7,582,819	10,378,653	1,294,284			<b>11,672,937</b>
Security Hut & fence-		10	729,243	245,717	974,960	33,800			<b>1,008,760</b>
Access Bridge		10	1,831,644	1,032,750	2,864,394				<b>2,864,394</b>
NDT Fence		5	408,910	81,890	490,800				<b>490,800</b>
NDT Boundary Wall		10	2,241,883	341,140	2,583,023				<b>2,583,023</b>
<b>TOTAL ASSETS VALUE</b>	<b>Rs.</b>		<b>190,293,978</b>	<b>174,675,827</b>	<b>364,969,804</b>	<b>28,543,483</b>	<b>(9,544,888)</b>	<b>-</b>	<b>383,968,400</b>

<b><u>DEPRICIATION</u></b>		As At		Re-stated	Additions/		As At	W D V as at
<b><u>Amortization/Depreciation</u></b>		<b>01/01/2013</b>	<b>Adjustment Made</b>	<b>Opening Bal.</b>	<b>Transfers in</b>	<b>Disposal</b>	<b>31.12.13</b>	<b>31.12.2013</b>
Land					98,485		98,485	8,042,927
					98,485		98,485	8,042,927
<b><u>Land &amp; Building</u></b>								
NCNDT-Land								<b>90,884,994</b>
Office Building	2		18,606,443	18,606,443	1,939,231		20,545,674	<b>76,416,633</b>
					1,939,231		20,545,674	<b>167,301,627</b>
<b><u>Property, Plant &amp; Equ.</u></b>								
Boundary Wall	10		2,876,475	2,876,475			2,876,475	<b>1</b>
Scientific Equipment	10	32,522,397	61,700,777	94,223,174	11,588,752		105,811,926	<b>61,737,777</b>
Scientific Equipment donation	10	4,345,195	66,621,686	70,966,881	9,590,075	(6,783,374)	73,773,582	<b>52,496,849</b>
Office Equip/ Furn & Fitti.	10	1,051,708	6,512,934	7,564,642	1,370,382	(2,365)	8,932,659	<b>9,467,668</b>
Other Equipment	10	441,014	862,955	1,303,969	2,507		1,306,476	<b>6,196</b>
Motor Vehicle	25		15,909,019	15,909,019	5,500,000	(1,042,148)	20,366,871	<b>10,656,235</b>
Radiation facility	10	867,550		867,550		(653,235)	214,315	<b>2</b>
Library Books	10	307,249	197,833	505,082	162,669	(16,353)	651,398	<b>965,644</b>
Computer items	33	505,870	10,709,832	11,215,702	1,837,265		13,052,967	3,031,444
Electronic Items	25	81,767	7,582,819	7,664,586	1,047,465		8,712,051	2,960,886
Security Hut	10		245,717	245,717	98,005		343,722	665,038
Access Bridge	10		1,032,750	1,032,750	286,439		1,319,189	1,545,205
NDT Fence	20		81,890	81,890	49,080		130,970	359,830
NDT Boundary Wall	10		341,140	341,140	258,302		599,442	1,983,581
<b>TOTAL DEPRICIATION</b>	<b>Rs.</b>	<b>40,122,750</b>	<b>174,675,827</b>	<b>214,798,577</b>	<b>31,790,941</b>	<b>(8,497,475)</b>	<b>238,092,043</b>	<b>145,876,359</b>
<b>NET BOOK VALUES</b>								
<b>Rs.</b>	<b>Note</b>	<b>2013</b>					<b>2012</b>	
<b>Land &amp; Building</b>		167,301,627					169,053,863	
<b>Lease Hold Properties</b>	<b>10.1</b>	8,042,927					8,141,412	
<b>Infrastructure, Plant &amp; Equ.</b>	<b>10.2</b>	145,876,359					150,171,228	
		<b>321,220,913</b>					<b>327,366,503</b>	

## **Disclosures to Accounts**

### **1. Relocation of the AEA & Revaluation of Property Plant & Equipment**

Process of revaluation had been initiated in the year 2012 in order to comply with LKAS 16.

A schedule of Scientific Equipment which are serviceable but the book value become zero were sent to the Department of Valuation.

In the meantime the 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 Malabe has been identified as the relocation place.

Cabinet approval has been received for the allocation of funds for acquisition of land and construction of new buildings during the year 2014 – 2016.

Japan International Cooperation Agency (JICA) has agreed to provide funds for new building in lieu of existing building through the RDA.

### **2. Un settled commitments at the end of the year 2013**

Cash balance as at 31.12.2013 represent the following capital commitments.

Item	Reference	Amount Rs.
Procurement of Forklift for MGIF	PO No. 2719	3,356,304.00
Progress Bill No.12 of SLLRDC – NCNDT Building	Bill dated 13.12.2013	2,542,041.00
		<b>5,898,345.00</b>

### **3. Outsourcing of AEA Properties**

The Board of Directors of the AEA 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 presently under the Ministry of Technology & research (MOTR).

### **4. Global Threat Reduction Initiative Programme (GTRI)**

United States of America (USA) has funded US\$ 53,000 under the above programme in order to dispose the two unserviceable nuclear sources available at Horticulture Research Institute Gannoruwa and AEA.

Gamma Chamber owned by the AEA also was disposed under this programme. Funds received under this project had been deposited in the Deputy Secretary's Account No 4201 under the Dept. of Treasury Operations (TOD).

Amount spent out of the funds received up to end of the year 2013 was US\$ 53,000 under the supplementary allocations approved by the Department of National Budget.

The above project was completed successfully during the year 2013.

### **5. Pending Court Cases**

Case No	Petitioners	Respondents	Current status
HCA LT 119/2010 LT/Case 08/278/2009	Atomic Energy Authority (AEA)	Mr.T.S.Illapperuma Ex. Employee/AEA	This case has been filed against the reinstatement of the employment under the LT decision of the LT Case 08/278/2009.  This appeal is scheduled to be taken up for hearing on 01.08.2014

## **6. Procurement under Cost-Sharing Basis**

AEA proceed to procure 2 items under Cost-Sharing Basis through IAEA Technical Cooperation Project SRL/0/010 in 2013. Approval has been granted by Cabinet paper No 12/0881/516/028/TBR in this regard.

X-Ray Calibration System total approximate cost is Rs 23.11 million. AEA has to bear Rs. 17.92 million including 3% to IAEA Programm supporting cost

Arrangements have been made to procure Ultra low background gamma spectroscopy system directly from IAEA under 100% cost sharing basis. Total app. cost is Rs. 21 million.

AEA has remitted Rs 38.9 million to International Atomic Energy Agency in order to procure of above items.

## **7. Arrears Payment to Employee Provident Fund (EPF)**

AEA policy on contribution to EPF was changed from 12% to 15% with effect from 26-05-2011 (which is the date of COPE Committee meeting) at the Board Meeting held on 07-12-2012. The decision was implemented from 01-01-2013. However, arrears payment of Rs. 1.4 million is payable to the Employee Provident Fund (EPF) for the period of May 2011 to December 2012.

AEA requested additional funds through a supplementary allocation from the General Treasury, however the Treasury has approved the arrears payment and instructed to utilize funds from AEA generated income.

Since the generated income was not sufficient to pay the arrears a request have been made to Commissioner General of Labour to grant approval to settle this amount monthly installment basis out of the generated income

## **8. Disposal of KIA Clarence Car (wp KI – 0960)**

Above vehicle had been obtained from the Sri Lanka Customs Department in 2009 out of detained vehicles. AEA decided to dispose the same during the year 2013 as it had been observed that the maintenance cost and the fuel consumption was very high. The Board of Directors had recommended to obtained special approval from the Department of National Budget for this matter since the vehicle was registered under AEA in 2009 (Below 10 years) and obtained the required approval.

As the Director Automobile Engineering Training Institute (AETI) had made a request to hand over this vehicle for the use of training purposes, AEA granted the approval to the above request with the approval of the Department of National Budget through the Ministry of Technology & Research. The vehicle was handed over to AETI on 15.07.2013 and written off from the books and passed accounting entries accordingly.

## **9. Supporting Radiation Processing of Natural Polymers for Agricultural and environmental remediation,**

Following environmental friendly products were developed by using natural polymers & radiation modification techniques.

1. Plant growth promoter/elicitor Product for Agriculture Applications by using Oligo-Chitosan Derivatives.
2. Fungicide Product for Agriculture Applications by using Low Molecular Weight Chitosan Derivatives.
3. Combine Product for Agriculture Applications by using above developed Fungicides & Plant growth promoter/elicitor.

4. Low molecular weight Iodo Chitosan derived complex product for Agriculture Applications with powerful fungicidal and bactericidal effect. (This is an alternative product for the commonly used similar products.)

Based on all successful results, research team conducted a field day programme in HORDI, Department of Agriculture, Gannoruwa on 6<sup>th</sup> of September 2013 to introduce the products to end users including organic farmers and agro product companies.

Direct expenditure incurred for pilot project has been accounted under R & D until the technology transfer is taken place.

## **9. Establishment of Lanka Atomic Energy Facilities Limited.**

Hon. Minister of Technology & Research (MOTR) has submitted a cabinet paper No.13/1728/526/023 dated 05.11.2013 on “Establishment of a Private Company to Manage, Operate and Maintain Entities Established by the Atomic Energy Authority (AEA) and its Successor.”

Although the above cabinet paper had been approved, the Board of Management of the AEA had observed the following contradictions between the cabinet memorandum and the approval.

1. Hon. Minister had sought approval to forming of limited liability company owned by the AEA (as per paragraph 5 of the memorandum) and approval granted as ownership of the company is vested with the Secretary to the Treasury.
2. However, the approval had also been granted to Hon. Minister’s proposal for AEA owned company, as the decision (i) states that paragraph 5 of the memorandum also approved.
3. Whilst decision (ii) (a) vests the ownership of the company on the Secretary to the Treasury, the decision (iii), absolves him of direct or indirect liabilities of the company, which yet again as a contradiction.

Considering the above facts the Board of Management of AEA has decided to make a request from the Secretary MOTR to take steps to reconsider the said cabinet decision.

In addition to the above, Board has emphasized the important role played by the AEA in initiating the nationally important projects such as Multipurpose Gamma irradiator Facility (MGIF) and National Centre for Non destructive Testing (NCNDT) and the valuable contribution made by its officers together with the expert assistance from the IAEA to make the said projects a reality.

AEA is waiting for revised decision in complying with the proposed structure as per the cabinet memorandum submitted by the Hon. Minister in this regard.

## **10. Expenditure incurred on construction of Multipurpose Gamma Irradiator Facility (MGIF)**

AEA has incurred initial expenses such as upgrading the facility by 100 Kci as instructed by the Secretary, MOTR and other expenses for conducting trial runs etc.

These expenses have been accounted under non trade debtors until the proposed company is formed.

## **Disclosures to Accounts**

### **IAEA Donations under Technical Cooperation**

The Atomic Energy Authority (AEA) 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 AEA under various IAEA projects have been accounted in AEA books of accounts.

The following details are relevant to the transactions during the year 2013 for AEA technical cooperation programmes.

<b>No</b>	<b>Project No.</b>	<b>Project Description</b>	<b>Allocation in Euros (€)</b>	<b>Allocation in SLRS (approximate)</b>	<b>Value of Equipment &amp; Consumables Received in SLRS</b>
	SRL/1/007	Strengthening the Non Destructive Testing (NDT) through the establishment of an accredited Center for NDT.	2,803	448, 480	391,930
	SRL/0/010	Strengthening of Radiation Safety Programme and Nuclear Analytical Capabilities of the National Research Center	34,000	5,400,000	5,453,548
		<b>Total</b>	<b>46,803</b>	<b>7,448,480</b>	<b>5,845,478</b>

In addition to above, AEA had conducted several research projects using IAEA assistance and trained AEA employees as well as officers of other national institutes in various fields. AEA 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 SRL Rs. Is 8.6 million which should be paid by the Ministry of Technology and Research. Only 5.6 million has been paid for 2013. The balance is to be paid in 2014
2. Assessed Programme Cost (APC) and National Participation Cost (NPC) SLRS. 6 million from the External Resources Department (ERD) of the General Treasury.





**විගණකාධිපති දෙපාර්තමේන්තුව**  
**கணக்காய்வாளர் தலைமை அபிபதி திணைக்களம்**  
**AUDITOR GENERAL'S DEPARTMENT**



මගේ අංකය } EH/B/AEA/1/13/01  
 எனது இல. }

මගේ අංකය }  
 உமது இல. }

දිනය } 22 April 2015  
 திகதி Date }

The Chairman  
 Atomic Energy Authority

**Report of the Auditor General on the Financial Statements of the Atomic Energy Authority for the year ended 31 December 2013 in terms of Section 14(2) (c) of the Finance Act No. 38 of 1971**

The audit of financial statements of the Atomic Energy Authority for the year ended 31 December 2013 comprising the statement of financial position as at 31 December 2013 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 Section 13(1) of the Finance Act No. 38 of 1971 and Section 32(3) of the Atomic Energy Authority Act No. 19 of 1969. My comments and observations which I consider should be published with the annual report of the Authority 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 issued to the Chairman of the Authority in due course.

**1.2 Management's Responsibility for the Financial Statement**

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.

**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 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

අංක 306/72, පොල්දූව පාර, බත්තරමුල්ල, ශ්‍රී ලංකාව. - இல. 306/72, பொல்தூவ வீதி, பத்தரமுல்லை, இலங்கை. - No. 306/72, Polduwa Road, Battaramulla, Sri Lanka

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judgments, including the assessment of the risk 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 Authority'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 Authority'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 the 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 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 Atomic Energy Authority as at 31 December 2013, 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 (SLPSAS)**

The following observations are made.

- (a) The material changes made to the amounts in the financial statements of the previous year had not been properly disclosed.
- (b) A stock of raw material amounted to Rs. 312,431 had been capitalized as development expenditure during the year under review, instead of being treated as closing stocks.
- (c) The Authority had not revalued its property plant and equipment to ensure that the carrying amounts did not differ materially from the fair value, which would be





determined at the balance sheet date as stipulated in **SLPSAS 7 – Property, Plant and Equipment**. Further, historical cost of the fully depreciated assets, which had been continuously used without being revalued, was Rs. 122.48 million as at 31 December 2013.

### 2.2.2 Accounting Deficiencies

The following observations are made.

- (a) According to the Cabinet decision taken to purchase the scientific equipment through International Atomic Energy Authority (IAEA), the Authority should pay the annual fee of US\$ 7,240.74 to the IAEA as administration and program assistance cost every year. However, the Authority had not accounted for that amount as payable to the IAEA for the year under review.
- (b) The Authority had awarded a contract to the Government Factory in 2010 at a cost of Rs.1,154,234 (including VAT) for sealing the windows in the main building in view of safe guard from rain water using rubber beading and silicon gum, and a sum of Rs.577,117 (including VAT) had been paid in August 2010 in this connection. However, the works had not been completed properly even up to the date of audit inspection carried out on 04 December 2014.

### 2.2.3 Unexplained Differences

The following observations are made.

- (a) The value of non-current assets as per the financial statements for the year 2013 was Rs.9,490,246, whereas according to the detailed schedule furnished together with the financial statements it was Rs. 9,417,746. Hence, the unexplained difference of Rs.72,500 had been observed between these two amounts.
- (b) The fixed asset register had not been maintained properly by the Authority. According to audit test checks, it was revealed that opening and closing balances of some fixed assets as per the financial statements (ledger accounts) had differed from the balances shown in the fixed assets register. Accordingly, differences of Rs. 827,861 and Rs. 279,179 relating to Scientific and Office Equipment, and Furniture and Fittings respectively had been observed in audit.



## 2.2.4 Accounts Receivable and Payable

The classification of total receivables of the Authority as at 31 December 2013 as compared with the previous year is as follows.

Item	Total Receivables as at 31 December	
	2013	2012
	Rs.	Rs.
Trade Receivable	4,391,420	4,604,649
Staff and Non-trade Receivables	40,317,170	1,736,301
Advances and Loans	5,678,764	6,031,423
Refundable Deposits	355,210	342,710
<b>Total</b>	<b>50,742,564</b>	<b>12,715,083</b>

The following observations are made in this regard.

- The staff and non-trade receivables had increased by Rs. 38,580,869 or 2,222 per cent as at the end of the year under review as compared with the previous year. The expenditure amounted to Rs. 39,773,419 incurred by the Authority for the Multi-purpose Gamma Irradiation Facility (MGIF) Project had been included in that figure as it was receivable from the Ministry of Science and Technology. However, that amount had not been confirmed by the Ministry.
- The age analysis relating to the trade receivables of Rs. 4,391,420 as at 31 December 2013 is given below.

Category of Debtors	Balance as at 31 Dec. 2013	Period of Outstanding			
		Less than 6 months	6 months – 12 months	1 – 2 years	Over 2 years
	Rs.	Rs.	Rs.	Rs.	Rs.
Government Institutions	2,982,391	869,083	334,317	830,419	948,572
Private Institutions	1,409,029	522,089	523,190	150,331	213,419
<b>Total</b>	<b>4,391,420</b>	<b>1,391,172</b>	<b>857,507</b>	<b>980,750</b>	<b>1,161,991</b>



The following observations are made in this regard.

- (i) The trade receivables of Rs. 2,142,739 were remained outstanding for a period ranging from one to eight years without being taken any recovery action.
  - (ii) The Authority had not established a policy to charge the interest on long outstanding balances.
  - (iii) Although the accounting policy in respect of provision for bad and doubtful debts had not been disclosed in the financial statements, a 100 per cent provision for bad and doubtful debts amounting to Rs. 909,576 had been made on the debtors outstanding for more than five years.
  - (iv) The Authority had not maintained individual ledger accounts for each debtor and instead monthly schedules had been prepared. As a result, services to the client institutions had been provided by the Authority without considering their outstanding balances.
  - (v) Due to lack of proper control over debtors, many issues in debt collection and invoicing were observed. According to the audit test check, it was revealed that four invoices issued for Rs. 81,417 were subsequently cancelled due to duplication.
- (c) The age analysis of debtors on the service category as at 31 December 2013 is shown below.

Category	Balance as at 31 December	Less than one year	01-02 years	03-04 years	More than 05 years
	Rs.	Rs.	Rs.	Rs.	Rs.
General Scientific Equipment	1,207,823	499,200	189,155	59,304	460,164
Radiation Protection	1,257,732	441,844	622,422	73,123	120,343
Non Destructive Testing (NDT) Inspection	812,923	750,495	12,304	32,824	17,300
NDT Training Courses	517,169	390,600	93,300	15,900	17,369
Food Testing	173,448	158,701	12,247	-	2,500
License Fees	422,322	7,838	51,322	71,262	291,900
<b>Total</b>	<b>4,391,417</b>	<b>2,248,678</b>	<b>980,750</b>	<b>252,413</b>	<b>909,576</b>





According to the above age analysis, a sum of Rs. 2,142,739 had been remained unrecovered for more than one year and out of that an amount of Rs. 909,576 was remained outstanding for more than 5 years, which had included a sum of Rs. 767,874 receivable from Government sector institutions.

### 3 Financial Review

#### 3.1 Financial Results

According to the financial statements presented, the operation of the Authority during the year under review had resulted in a deficit of Rs. 15,176,943 as compared with the corresponding deficit of Rs. 10,150,352 for the preceding year, thus indicating a further deterioration of Rs. 5,026,591 in the financial results. Even though, the total revenue had been increased by 1.5 per cent during the year under review, the decrease of income from Non-destructive Testing (NDT) Inspection Services, Licensee Fees and Radiation Protection Services by 36 per cent, 5 per cent and 42 per cent respectively and the increase of total expenditure as compared with the preceding year by 5 per cent were the main contributory factors for this deterioration in financial results as analyzed below.

	For the year ended		Changes	Percentage
	2013	2012	[Favorable/ (Adverse)]	
	Rs.	Rs.	Rs.	
<b>Total Revenue</b>	<b>131,548,968</b>	<b>129,608,964</b>	<b>1,940,004</b>	<b>1.5</b>
<b>Less: Expenditure</b>				
Wages, Salaries and Employee Benefits	(68,378,919)	(63,666,996)	(4,711,923)	7.4
Supplies and Consumable	(7,994,543)	(8,213,588)	219,045	2.7
Depreciation and Amortization	(33,828,656)	(31,711,770)	(2,116,886)	6.7
Impairment of Property, Plant and Equipment	(5,581,887)	(8,181,196)	2,599,309	31.8
Finance Cost and Other Expenditure	(30,941,906)	(27,985,766)	(2,956,140)	10.6
<b>Total Expenditure</b>	<b>(146,725,910)</b>	<b>(139,759,316)</b>	<b>(6,966,594)</b>	<b>5.0</b>
<b>Deficit</b>	<b>(15,176,943)</b>	<b>(10,150,352)</b>	<b>(5,026,591)</b>	<b>49.5</b>

### 3.2 Analytical Financial Review

The financial results and the net assets position of the Authority for the year 2013 and for the previous five years are depicted in the table given below.

Year	Excess/(Deficit) Before Tax	Net Assets Position as at end of the Year
-----	-----	-----
	Rs.	Rs.
2013	(15,176,943)	559,038,724
2012	(10,150,352)	406,662,557
2011	3,297,783	324,166,702
2010	(618,182)	260,353,975
2009	841,179	180,401,940
2008	7,729,656	184,453,589

## 4 Operating Review

### 4.1 Performance

As per the Corporate Plan of the Authority, the Authority is functioning as the focal point of Sri Lanka for the coordination and implementation of Technical Cooperation Programmes of the IAEA in order to develop nuclear technology in the country. Accordingly, IAEA provides funds to member countries for various projects that linked to the Country Programme Framework or to the National Development Plan where there is no Country Programme Framework, under their Technical Cooperation Programmes. However, the IAEA expects the Authority to complete the implemented projects within the given time period with the coordination of relevant Recipient Institutes and Counterpart(s).

According to the audit test checks carried out in this connection, the following observations are made.

- (a) The Authority had failed to utilize the funds approved by the IAEA within the stipulated time period due to various reasons such as lack of proper coordination with the IAEA and recipient institutions, failure to maintain proper system for identification and assessment of country's nuclear technology requirements, weaknesses in recording and reporting systems, inefficiencies in monitoring of project activities, etc.



- (b) The Authority did not have the necessary expertise and nuclear facilities at the national level to utilize nuclear techniques in order to address the national development issues and contribute to achievement of socio economic goals.
- (c) Even though the Authority was expected to implement projects and utilize the available funds provided by the donor agencies in an effective and efficient manner, it was observed that implementation rate of some projects were at a very low level and meanwhile, it had evidenced that the project designs and work plans had not properly focused on country requirements. Instances of failures in the implementation of some projects are shown below.

Project No.	Funds Approved						Utilization of Total Fund Approved as at 30 June 2013		Name of the Recipient Institutes and Counterpart(s)
	2007	2008	2009	2010	2011	Total	Amount	Percentage	
	Euro	Euro	Euro	Euro	Euro	Euro	Euro	%	
SRL/5/040	74,100	143,495	-	69,395	-	286,990	57,450	20	Coconut Research Institute
SRL/8/020	-	-	82,900	87,155	66,300	236,355	7,770	3	AEA, Central Environmental Authority

According to the above information it was revealed that the Authority had failed to get maximum benefit to the country from the IAEA contribution. Further, the current position of those projects was not made available to audit.

## 4.2 Management Inefficiencies

### (a) Excessive Payment of Value Added Tax

According to Part II of the First Schedule of Value Added Tax (VAT) Act, No. 14 of 2002 (consolidation – 2013), the supply or import of machinery is exempted from VAT. However, the Authority had paid a sum of Rs. 1,403,824 as VAT on procuring of eight scientific items without considering the exception clause.

### (b) Training

The training programmes of the Authority had been conducted by individual divisions according to their requirements due to non-establishment of a separate training division to handle the training courses to be carried out by the Authority and a uniform mechanism for invoicing and carrying out the training programmes was not implemented. The following observations are also made in this regard.





- (i) There was no proper basis for collecting of course fees.
- (ii) There were instances where cancellation of invoices due to non-availability of sufficient participants for training courses.

**(c) Radiation Testing for Food Items**

The following observations are made.

- (i) Although, according to audit test check carried out in May 2014, it was revealed that, out of 146 samples of food items handed over to the Authority by the importers during the period from 2012 to 2013 for radiation testing, the importers had collected only 24 sample reports. The remaining 122 reports or 84 per cent had not been collected by the importers. However, it was observed that 93 importations in respect of 122 samples as mentioned above had been made by the importers without obtaining the radiation testing reports up to the date of audit. Accordingly, the control procedures designed by the Authority over the radiation testing for food items had not been operated effectively.
- (ii) Moreover, the Authority had not taken necessary actions to caution and encourage the Department of Customs and importers to collect radiation testing reports before custom clearance.
- (iii) Also, an appropriate procedure for coding of samples handed over to the Authority for radiation testing had not been designed and implemented by the Authority. Accordingly, it was observed that the possibility to identify samples by the names of importers or companies might cause to a risk of fraud or error. Therefore, the integrity and independency of such service could be questionable. As such, the existing practice of radiation testing for food items had not been operated effectively to ensure the protection of human health in the country.

**4.3 Idle and Under Utilized Assets**

The following observations are made.

- (a) Multi-purpose Gamma Irradiation Facility (MGIF) valued at Rs. 9,417,746 donated by the IAEA in May 2010 had remained unutilized until commenced its operational activities in February 2014.



- (b) An asset named as “Fourier Transform Infrared Spectrometer (FTIR)”, valued at Rs.5,611,171, donated by the IAEA on 31 May 2011 had remained idle up to the date of audit inspection on 30 September 2014.

#### 4.4 Procurement of Machinery and Equipment

According to the audit test checks carried out on procurement of machinery and equipment during the year under review, the following observations are made.

- (a) 880 Della Projector with Ir-192

The above equipment had been donated by the IAEA in October 2012 mainly for training purposes. The value of Ir-192 instrument was Rs. 2,905,075, and according to the “Source Certificate” its life time would start decay from the date of ‘activity on’ and it would have finished on 18 September 2013 involuntarily. Accordingly, 81 per cent of the lifetime of that instrument had decayed when the first inspection carried out on 21 February 2013. The following observations are also made in this connection.

- (i) The equipment had been donated without some important accessories, such as “Lead shot”, which was required for safety. The ‘Operating and Maintenance Manual’ of the instrument, had advised that “an unshielded source at close range could cause serious injury or death to anyone who was exposed to it, even for a short duration of time”. Therefore, it was observed that the usage of that equipment without safety measures was very danger. Further, other required accessories of the said equipment such as Cobalt-60 & Iridium-192 Exposure Calculator and Cobalt-60 & Iridium-192 Cardboard Calculator had been received only on 03 July 2013, on which date 93 per cent of the lifetime of that instrument had decayed, and hence the Authority was unable to utilize that valuable equipment effectively.
- (ii) This equipment had been used for inspection without the said safety measures mentioned in the manual. For instance, despite risks it involved, appropriate transport facilities had not been provided when transporting that equipment for inspection purposes. Moreover, without considering the instructions of the manual to use that equipment under the trained officer, in several instances it had been handled by minor staff of the Authority.
- (iii) According to audit test checks, it was revealed that proper records relating to departure and return of the equipment had not been maintained at the gate of the Authority when renting out the said equipment.

(b) Eddy Current Tube Inspection Instrument

The Authority had purchased the above equipment on 27 March 2012 at a cost of Rs.8,219,680 with the objective of developing Eddy Current Tube Testing technology, locally. The following observations are made in this regard.

- (i) A feasibility study had not been carried out before purchasing the item to identify the industries in which such technology could be used.
- (ii) Even though an officer of the Authority had been sent to the Malaysian Institute for Nuclear Technology for training on Eddy Current Testing, he had obtained general training instead of specified training. Therefore, the Authority was unable to use that equipment for commercial purposes.
- (iii) According to the information made available, the fairness of the technical specifications of the equipment was questionable in audit. For instance, the equipment had been purchased at a price of 105 per cent over the estimated cost of Rs. 4 million.
- (iv) Even though 8 months warranty period had been elapsed as at 31 December 2013, the equipment had remained idle without being utilized for the intendant purposes.

**4.5 Human Resources Management**

Twenty nine vacancies in different categories of the permanent staff, including 3 in senior grade, 17 in secondary grade and 9 in primary grades, were observed at the end of the year 2013, which showed the failure of the Authority to maintain a realistic cadre level by reviewing periodically.

**5 Accountability and Good Governance**

**5.1 Internal Audit**

The Internal Audit Division of the Authority consists of only one female officer, and some other additional works had too been assigned her. Accordingly, it was observed that the internal audit functions had not been appropriately designed and implemented by the Authority to monitor the internal control system of the entity.





## 5.2 Audit Committee

Non-responding by the Board of Directors with regard to the recommendations made by the Audit Committee were observed in several instances.

## 5.3 Procurement Plan

Even though a Procurement Plan had been prepared by the Authority, it was not in line with the Action Plan and the Budget prepared by the Authority for the year under review.


## 5.4 Budgetary Control

Significant variances were observed between the budgeted and the actuals, thus indicating that the budget had not been made use of as an effective instrument of management control.

## 6 Systems and Controls

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

- (a) Property, Plant and Equipment
- (b) Debtors and Other Receivables
- (c) Compliance with Laws, Rules, etc.
- (d) Procurements
- (e) Utilization of Resources
- (f) Human Resources Management
- (g) Assets Management
- (h) Budgetary Control

  
**W.P.C. Wickramaratne**  
Acting Auditor General

## **Replies for Report of the Auditor General on the Financial Statements of the Atomic Energy Authority for the year ended 31 December 2013 in terms of section 14(2)(c) of the Finance Act, No.38 of 1971**

### **2.2 Comments on Financial Statements**

#### **2.2.1 Sri Lanka Public Sector Accounting Standards (SLPSAS)**

- (a) Steps have been taken adopt a relevant standard.
- (b) This was corrected in 2014.
- (c) Valuation Department is attending to this matter. Requested information regarding the scientific equipment by them are under preparation with the help of respective Divisional Heads. Internal committee will be appointed to revaluation of office equipment and furniture.

#### **2.2.2. Accounting Deficiencies**

- (a) IAEA has informed that no need to pay administration & programme assistant cost for procurement under IAEA cost sharing method.
- (b) Although the Authority repeatedly informed to the supplier, they failed to complete the balance work.  
Since the Building will be demolished in 2016, that amount has written off in the year 2014. This decision has been informed to the supplier.

#### **2.2.3. Unexplained Differences**

- (a) This was rectified in 2014.
- (b) A special Board of Survey has been carried out to identify physically available Assets. According to the findings of the survey, steps will be taken to adjust the Assets Register and Ledger accounts.

#### **2.2.4. Accounts Receivables and Payable**

- (a) Necessary adjustments will be made to record this balance as AEA expenses after transferring the ownership of the MGIF Project.
- (b) A policy decision has been taken to discourage trade debtors, as per the recommendation of the Audit and Management Committee of SLAEB.
- (i) Many of the debtors are belonging to Radiation Protection Division for Licenses and inspections. Suitable action in this regard will be taken when the assets and liabilities of the AEA are separated as per new Act.

In addition to that Audit and management committee of the SLAEB recommended to obtain Board Decision to transfer the responsibility of debts recoveries to the Directors of the relevant Divisions.

- (ii)- (v) Computer Accounting Software is being introduced to minimize the deficiencies of the Debtor Control System.
- (c) Computer Accounting Software is being introduced to minimize the deficiencies of the Debtor Control System.

### **3. Financial Review**

#### **3.1. Financial Result**

Number of staff in 2013 compared to 2012 has been increased and EPF contribution increased by 3% from 2013 and increased allowance of cost of living without taking Government of Sri

Lanka funds. The income from Non Destructive Testing services and Radiation Protection services were decreased due to decrease of demand for these services in 2013.

The AEA has involved in several activities such as air pollution monitoring, Maintenance of Early Warning System, Water Resource Development Project and Public awareness programme which do not generate an income.

The actual expenditure will be accounted separately in final accounts from 2015.

### **3.2 Analytical Financial Review**

Accepted. Capital Budget of 2012 and 2013 has increased markedly due to expenditure incurred for construction of NCNDT.

## **4. Operating Review**

### **4.1 Performance**

(a) Due to operation failures and insufficient commitments from the national project counterpart institutions, the total allocations of IAEA core inputs were not utilized on time. However the Board of Management appointed a committee comprising subject specialists to evaluate the IAEA projects carried out in the past and provide necessary guidelines for its future functions.

(b) The authority has laboratory facilities and expertise to provide various services using nuclear technology required by the country and also provide IAEA technical assistance to promote nuclear applications for Socio economic development.

(c) Informed to the IAEA to utilize unused funds available in these projects and to close projects after transferring unused funds available in their budget in appropriate manner. These projects are now closed.

### **4.2. Management Inefficiencies**

#### **(a) Excessive Payment of value Added Tax**

This matter is under investigation with the Sri Lanka Customs Department to ensure whether these of equipment are VAT exempted.

#### **(b) Training**

Training Programmes are now conducted mainly in Non Destructive Testing center only. A training center has been established of the NCNDT and system has established for invoicing and collecting course fees.

#### **(c) Radiation Testing for Food Items.**

##### **(i) - (iii)**

This issue was raised at the COPE meeting held on 26.11.2014. Secretary of the Ministry wrote a letter to Director General of Health services of Ministry of Health who is the Chief Food Authority as directed by the COPE.

43 reports which had not been collected by the customer were collected from the SLAEB. DG Health Services by his letter dated 05.12.2014 to Secretary of the Ministry informed that authorized officers have not released any of the consignments in question related to 43 reports.

As per the request of DG Health services by this letter PA/EOH/FCAU/24/2013 dated 02.02.2015 now the reports are sent to Deputy Directors of Food Control Administration unit w.e.f.23.02.2015 by hand.

An appropriate procedure for coding samples handed over to the SLAEB has been proposed by SLAERC soon.

### **4.3. Idle and Under Utilized Assets**

(a) The laboratory equipment (Rs. 9,417,746) was received under the Technical Programme of IAEA. The Board of AEA approved to obtain the said equipments since it has to be implemented within the project period (Attached herewith). If not all the equipment has to be purchased from government funds. At present equipments are being utilized for operation of the SLGC.

(b) The equipment has been installed at the Sri Lanka Atomic Energy Board and in operation now.

### **4.4 Procurement of Machinery & Equipment**

#### **(a) 880 Della Projector with Ir-192**

(i) & (ii) The equipment is mostly used in NDT exposure room which has been constructed as per Radiation Protection Regulations or all remote locations which again follow the same Regulations. Therefore, there is no danger in using the equipment in the exposure room.

Equipment was used for several Training Courses and workshop in the last 3 years. Steps have been taken to re-fill it when necessary.

(iii) Steps will be taken to introduce a movement register to record that movement information of the Equipment.

#### **(b) Eddy Current Tube Inspection Instrument**

(i) to (iv) This equipment was purchased with the objective of developing Eddy Current Tube Testing technology locally. One officer had been sent to Malaysian Institute for Nuclear Technology (MINT) under a TC project, to obtain him experience not only on Eddy Current Testing, but also to study all other NDT technologies including advanced NDT techniques. He had obtained general training on Eddy Current Testing.

In addition, we cannot expect that the same type of equipment use in Sri Lanka is available in MINT. But the theoretical background and other basic matters are same. So, this training programme was beneficial to above officer.

The equipment used for several Training Courses in the last 3 Years.

Steps will be taken to carried feasibility study with the help of subject specialists before decide procurement of such expensive equipment in the future.

### **4.5 Human Resources Management**

Out of the total vacancies (Nos.29) 04 Nos were filled including Senior category 01 post and secondary category 03 posts.

The main reasons for the Delay to fill the vacancies are Scheme of Recruitment (SOR) has been forwarded to the management services Department (MSD) to get approval for amendments as per specimen issued by MSD. The reply is seeking still.

In addition to that, as per the Sri Lanka Atomic Energy Act No. 40 of 2014, Sri Lanka Atomic Energy Board (SLAEB) was established on 01.01.2015. Presently, Schemes of Recruitment (SOR) are preparing for the SLAEB considering the identified issues of previous SOR such as including grade promotion system, internal promotion scheme for the lower categories etc.

## **5. Accountability and Good Governance**

### **5.1 Internal Audit**

Considering the increase of activities of the Authority and simultaneously to strengthen Internal Audit functions carder approval, new post of Internal Audit Officer has been received from the Department of Management Services. Filling this Post is being in processing. In

addition MSD approval has been awaited to upgrade excising Internal Audit Post to chief Internal Auditor position. Director MSD informed verbally that during restructuring process it can be considered. In the meantime considering the COPE directions to strengthen the Internal Audit functions, New Posts of Chief Internal Auditor and an Assistant Internal Auditor – Technical have been created at the preparation of New SOR for Sri Lanka Atomic Energy Board.

## **5.2 Audit Committee**

Audit Committee minutes are being submitted to the Board and decision on then have been implemented.

## **5.3 Procurement Plan**

Steps will be taken to purpose procurement plan in line with the capital Budget from the next Year.

## **5.4 Budgetary Control**

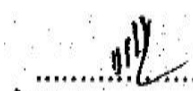
Variances were taken place in the recurrent budget due to the following reasons.

1. Salary increases as per National Budget proposals.
2. Changes in EPF & ETF contributions.
3. Staff turn over
4. Fuel prices
5. Frequency of machine break downs
6. New R & D projects

Steps will be taken to control expenses within the Budget allocation from next year.

## **6. Systems and Controls**

Several steps have been taken by the Authority to establish proper systems and controls procedures. However at present a committee has appointed comprising members of the senior management committee to preparation of manual of procedure for Administration, HR and Financial Activities.

  
.....  
Chairman  
Atomic Energy Authority.