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Atomic Energy Authority,
60/460, Baseline Road,
Orugodawatta,
Wellampitiya .
26th April 2013.

The Hon Minister of Technology Research and Atomic Energy.
Ministry of Technology Research and Atomic Energy,
Colombo.

Dear Sir,

Annual Report of the Atomic Energy Authority for the period

1st January 2011- 31st December 2011

In terms of section 34 (1) of the Atomic Energy Authority Act. No19 of 1969, I have the honour to submit the Annual Report of the Atomic Energy Authority for the year 2011,together with

a. A copy of the Statement of Financial Performance
b. A copy of the Statement of Financial Position
c. Auditor General's Report

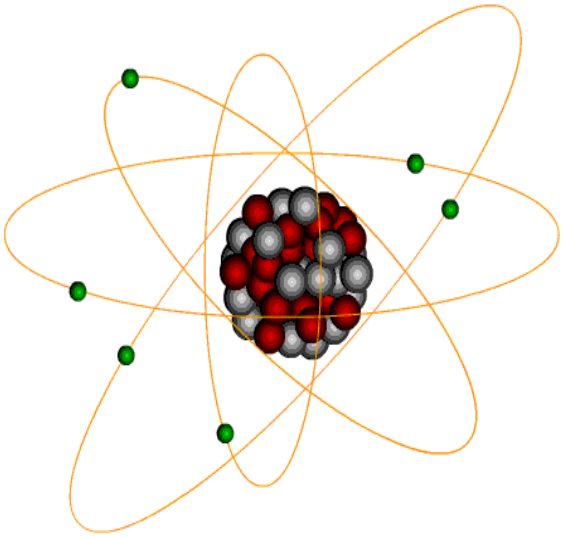
Thanking You.

Yours faithfully,

R. L. Wijayawardan

Chairman,
Atomic Energy Authority.

ANNUAL REPORT- 2011



ATOMIC ENERGY AUTHORITY

"FOCAL POINT FOR PEACEFUL APPLICATIONS OF NUCLEAR TECHNOLOGY

FOR A PROSPEROUS SRI LANKA……"

No. 60/460, Baseline Road, Orugodawatta,

Wellampitiya

Telephone: 2533427-8, 2533449 Fax: 2533448

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 programme 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 June 2011 were:

Prof. W. Abeyewickreme (Chairman) – B.Sc. in Applied Science, SJP, B.Sc. (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)

(Professor, Department of Farm Animal Production and Health, University of Peradeniya)

Eng. (Mr.) M.G.A. Goonetilleke (Board Member)- BSc (Eng), GradIEAust, MBA(SJP), MIE (SL), CEng., Dip-Int Affairs (BCIS), MIEEE

(Director (Technical), Ministry of Power and Energy)

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

(Consultant Radiologist, Nuclear Imaging Unit, Department of Radiology, National Hospital)

Dr. Ranjith L. Wijayawardana (Board Member)- B.Sc. (Hons) in Physics-1st Class, M.Sc. in Physics, PhD in Experimental High Energy Physics (USA)

(Senior Lecturer, Department of Physics, University of Peradeniya)

Prof. Janitha Abeywickrema Liyanage (Board Member)- B.Sc.(sp) Hons, PhD in Chemistry

(Department of Chemistry, University of Kelaniya)

Mr. R. Uduwawala (Board Member)-B.Sc.Sp.(Physics) Master of Organizational Leadership (Monash University)

(Director, Dept. of National Budget, Ministry of Finance and Planning)

Prof. W. Abeyewickreme resigned from chairmanship and Dr. Ranjith Wijayawardana assumed duties as the new Chairman on 06th June 2011.

During the period under review the Board held 11 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. J.M.A.C. Jayasinghe	Executive Director	B.Sc. (Colombo), M.Sc. (UNSW)
Mr. H.G.P. Karunaratne	Head, International and Human Resources Division	B.Ed. Colombo DBM (NIBM)
Mr. D.G.L.Wickramanayake	Head, Industrial Applications Division	B.Sc., M.Sc. (Colombo) M.Sc. (UK)
Mr. C. Kasige	Head, General Scientific Division	B.Sc. (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)
1.Ms. M.C.S.Seneviratne 2. Mr. Vajira Waduge	Head, Life Science Division	B.Sc. (SJPU) MSc. (Col.) B.Sc. (Peradeniya), M.sc. (Colombo)

1. Executive Summary:

It is with great pleasure that I present the annual report of the Atomic Energy Authority for the year 2011. As in the previous years, with the limited financial and human resources available, AEA continued to work towards its goals providing benefits to the Sri Lankan community using nuclear technology.

Drafting of the new act was almost complete and the senior management committee of AEA met regularly, monthly, to review work plans and monitor progress.

Cooperate Plan for the period from 2011-2015 was prepared and almost completed.

The activities of AEA during the year 2011 are reported under the areas

a. Radiation Protection b.Programmes of the International Atomic Energy Agency c. Nuclear Instrumentation d. Non-destructive Testing e. Radiation Processing f. Isotope Hydrology g. Nuclear Analytical services h. Information Services and i. Administration

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, and by monitoring radiation workers.

The AEA issued 133 licenses and registrations for use and possession of radioisotopes or irradiation apparatus (including X-ray equipment)

The number of authorizations issued to import and export radioactive material and X-ray equipment was 451.

The number of food samples (imported as well as food samples which were to be exported) tested and for which certificates were issued were 7650.

Repair of nuclear instruments/reinstallation of software/performance testing carried out by the AEA were 48 while the number of software and hardware maintenance / IT and network related services to AEA were 112.

The number of radiation monitoring instruments calibrated which belong to AEA and external institutions were 59 while number of Personal Monitored for Occupational exposure to ionizing Radiation were 933.

In the industrial sector 114 NDT inspection services were provided for the effective functioning of the machinery used enabling greater productivity. The number of NDT Training courses and workshops held were 9 with the participation of 249 personnel.

Steps were taken to initiate activities in relation to establishment of a National Centre for NDT by 2013. The Foundation Laying ceremony for the National Centre for Non- Destructive Testing was held on 07th October 2011 with the participation of Hon. Minister of Economic Development Basil Rajapakse, Hon. Minister of Power and Energy Patali Champika Ranawaka and Public Relations Minister Mervyn Silva.

An experiment was carried out (jointly with CEB) at the Samanalawewa reservoir to find its leak which was a problem for several decades and ingress area was discovered.

Work connected with the Multi-purpose gamma irradiation facility continued.

Manpower development is an essential component for the socio-economic development of Sri Lanka. With the assistance of the IAEA and the Japanese and Korean Governments, the AEA continued to develop technical capabilities of the scientists by providing expert services, fellowships and scientific visits, short term foreign training and seminars for local scientists. In-house human resource

development was also promoted through courses conducted for administrative and support staff of AEA.

The whole staff of AEA worked wholeheartedly to protect the Sri Lankan community from the Fukushima nuclear accident that occurred in Japan by establishing an emergency centre and hotline at AEA which was open round the clock. Banners were placed at the Katunayake International Airport to inform those arriving from Japan and they were asked to come to AEA directly for whole body radiation contamination check ups.

I wish to thank the Members of the Board, Senior Management and the workforce of AEA for their co-operation, in assisting to carry out the above programmes successfully.

Dr. Ranjith Wijayawardana (Chairman)

Audit and Management Committee Report -2011

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 2011 consisted with the following members.

a) Mr. R. Uduwawala.(Treasury Representative) Chairman to the Audit and Management Committee.
b) Dr. R. L. Wijewardena. Member
c) Prof. J. AbeywickremaLiyanage. Member
d) Dr. N.J. Abeygunawardena. Member

Above three members are Non-Executive Directors of Atomic Energy Authority and possess a wide range of experience in Scientific, Finance and Administration Fields.

Internal Audit Officer acts as the Secretary of the Audit and Management Committee.

A representative of the Auditor General (Mr. K .G. P. W. Gamage.) attends meetings as an observer.

Meetings 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 2011 five 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) The Audit and Management Committee is required to review the continuing impartiality of the internal auditors and their effectiveness.

b) The Audit and Management Committee should also address relevant issues concerning the subsidiaries of the enterprise, if any, on a regular basis.

c) The Committee should 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) The Audit and Management Committee should 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) The Audit and Management Committee should review the internal audit/External audit reports, Management Letters and the recommendations of COPE, and help the Board to take remedial actions.

f) The Audit Committee should assist the Board to introduce and implement adequate internal control system.

g) The Audit Committee should meet at least once in three months and report its recommendations to the Board of Directors soon thereafter, along with the minutes of the meeting, to facilitate taking corrective measures.

h) Terms of Reference of the Audit and Management Committee should be issued by the Board of Directors.

Activities of the Audit Committee during 2011

1. The Audit Committee reviewed and approved the annual Internal Audit plans for the year 2011.

2. The Committee reviewed the Implementation of recommendations of the previous committee meetings. The Committee specially reviewed,

- Progress in the preparation of Inventory for Scientific Equipment.
- Progress in Debts collections
- Recovery of loss incurred from vehicles accidents.
- Accounting Deficiencies –Issuing of Performa invoices for licenses fees.

3. The committee noted the Internal Audit reports and the following facts were highlighted.

i. Reviewed the Internal Audit report related to Trade Debtors.

Following recommendations were made to avoid repetition of deficiencies.

- Steps should be taken to improve inter divisional communication procedure. It will be helpful to minimize the deficiencies of issuing invoices.
- An arrangement should be made to confirm the individual debt balances as at 31-12-2010.
- Percentage of debt balance from annual income of each division also should be considered at the individual performance evaluations in the future.
- The Committee Recommended implementing a software solution for accounting and controlling income and debtors. Committee suggested to get the assistance from ICTA

ii. Reviewed the Internal Audit report related to contractual services and equipment repair expenses for which following recommendations were made.

- Every service agreement should be checked by the internal auditor before entering into an agreement.

- Committee noted the delay in selecting a repair service provider for Central Air Conditioner system.

- Suggested to submit the cost benefits analysis to the Board to justify the total repair cost of the Gamma Cell, as the repair cost is higher than the original price of the Cell.

iii. Reviewed the internal audit observations in respect of maintenance of vehicle running charts and log books and advised to strengthen the control procedures to over come deficiencies in vehicle maintenance.

iv. The committee noted the deficiencies in the stock valuation and delay in implementation of the Board of survey recommendations and instructed to prepare a proper internal control procedure.

v. The Committee recommended that invoice cancellation should be done through the Committee recommendation to chairman to cancel relevant invoices after collecting original invoice.

4. The audit Committee suggested the preparation of a scheme for selection for foreign training and fellowships in order to improve the transparency of the selection procedure.5. The committee reviewed the Auditor General's Reports 2010 and management responses.

Recommended some changes /elaborations/ corrections that are to be incorporated and also recommended to submit Audit Report and explanations to the Board.

6. Reviewed implementation of recommendations of the Committee on Public Enterprises

(COPE).

7. Others

i. Regarding the request made for direct purchase of new Telephone lines , the committee suggested that an internal evaluation should be done by the Administration Division in order to identify the correct requirements.

ii. Regarding the surcharge payment, committee recommended to prepare a time table to make the statutory payments and assign responsibilities to follow up action to ensure statutory payments on time.

3. Radiation Protection Programme

3.1 New Act for Atomic Energy

Approval of the Cabinet of Ministers has been granted to draft a new Act for Atomic Energy on 22-06-2011 as the existing Act is very old and no provisions to implement certain international requirements. A new Act was drafted by the AEA technical committee appointed for this task incorporating latest international requirements on radiation protection, nuclear security, transport safety and radioactive waste management. The International Atomic Energy Agency (IAEA) has provided an expert mission and held 02 day workshop with stakeholders to discuss the appropriateness of the draft. Some amendments agreed with the IAEA expert and stakeholders were incorporated to the draft. The draft was submitted to the Legal Draftsman for review and at the request of Legal Draftsman's Department; The AEA Technical committee had several discussions with the Legal Draftsman's Department lawyers, to explain the scientific basis of the draft. The review of the draft by Legal Draftsman is completed and it is expected to submit this bill to Parliament before end of this year.

3.2 Guidance Manual

Division of Radiation Protection prepared a sample manual on "Radiation Safety of Diagnostic and Interventional Procedures Using X-rays". The document was reviewed by the Head, Radiation Protection and some amendments were made. AEA Board approval was granted for the final draft for implementation. The manual was named as "Manual on Guidance for Preparation of Local Rules for Radiation Safety of Diagnostic and Interventional Procedures Using X-rays". 2000 copies of the manual were printed and distributed among the license holders for the implementation of safety rules within their radiology facilities.

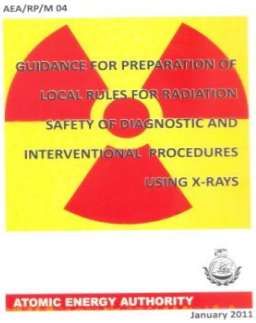


Fig No.1:First page of the manual

3.3 Code of Practice on Industrial Radiography

A code of practice on Safety of Industrial Radiography was prepared by the Division of Radiation Protection and submitted to stakeholders to get their views. A draft prepared by the AEA incorporating comments of stakeholders was reviewed by an IAEA expert. Final version of the draft was prepared. The document will be printed and distributed to the users to strengthen the safety of workers.

3.4 Radiological Emergency Response and Planning

A national plan on Radiological Emergency Response and Planning (Rad Plan) was drafted by the AEA. This plan was discussed with the officers of the Disaster Management Centre. A meeting will be held with the stakeholders to review the draft.

Arrangements have been made for installation of the proposed Nuclear Disaster Early Warning System (EWS) to early detection of any increase of radioactivity in Sri Lanka due to a nuclear power plant accident in a neighboring country. The following activities were carried out

-discussed with the DMC and SL NAVY and held a meeting at the Ministry of Defense to obtain approval to use Naval Bases for installation of the equipment

-Visited Kalpitiya, Mannar, Delft and Kankasanthurai naval bases to select locations to install the equipment

Base line data were collected in these bases prior to installation of the equipment

The AEA conducted In-situ spectroscopy and dose rate measurement for Base line data in Jaffna Penesula. Discussed with IAEA to obtain equipment for EWS

3.5 Implementation of Physical Protection Programmme

3.5.1 Assurance visits were made to the following institutions with Global Threat Reduction Initiative (GTRI) team, to ascertain the progress of implementation of arrangements for physical protection of radiation sources that were provided by GTRI funds.

National Cancer Institute, Maharagama
Asiri Surgical Hospital, Colombo
University of Colombo, Colombo
General Hospital, Anuradhapura
University of Peradeniya, Peradeniya

3.5.2 In collaboration with US GTRI programme, a national workshop was conducted on "Development of Regulations for the Security of Radiation Sources" from 28th February to 1st March 2011.

3.5.3 "National Training Course on Advanced Search and Secure of Orphan Radioactive Sources" was conducted for 20 participants from 20th – 24th June 2011.

3.5.4 A source search operation (Fig.No:2) was conducted at Ceylon Steel Corporation in collaboration with GTRI experts and 05 old Cs-137 sources were found during the operation.

Fig No.02: A source search operation

3.5.5 Arrangements were made to obtain Cabinet approval to sign an agreement with US DOE to implement a radiation source security programme in Sri Lanka.

3.6 Safety Inspections / Supervisions

3.6.1 112 Regulatory and surprise inspections were conducted.

3.6.2 On the request of Cancer Institute, Mahargama and Central Environmental Authority, liquid samples were collected from sewerage lines of Cancer Institute, Maharagama,for Monitoring of I-131. Different kinds of samples collected were analyzed at the AEA Analytical Laboratory and a report with recommendations was prepared for implementation.

3.6.3 On the request of Fonterra Brands Lanka (Pvt.) Ltd., a radiation survey was carried out at the Premises of Fonterra Brands Lanka (Pvt.) Ltd. to find out whether there are any radiation leakages before issuing a certificate on radiation.

3.6.4 Supervision and radiation protection arrangements were done for the transport of Co-60 radioactive sources from Colombo Port to Ansell Lanka (Pvt.) Ltd., Biyagama.

3.6.5. An inspection was carried out at newly constructed Iodine Therapy facility at General Hospital, Kurunegala and necessary recommendations were given for further improvement for radiation protection.

3.6.6 Supervision and consultancy services were given on the safety aspects and was directly involved in the radiation protection activities of nuclear analytical test performed for Samanalawewa water leak.(Fig. No: 03)

Fig No. 03: Set up for release of I-131 radioactive tracer to the Samanalawewa resourvior

3.7 Surprise Visits

The number of surprise visits conducted at unauthorized X-ray facilities was 12. Immediate actions were taken to cancel some facilities, and advice was given to improve the radiation protection requirements of these facilities for licensing process.

3.8 Legal Action against unauthorized uses

Legal action has been taken to enforce penalties for the use of unauthorized X-ray machine at Seetha Channeling Centre, Pilimathalawa. This trial was done at the Magistrate Court, Kandy. The accused agreed at the court to implement all the radiation protection requirements imposed by the AEA and Court fined the accused.

3.9 Assessments of facilities / Authorizations granted

No. of licenses issued	=133
No. of Import / Export authorizations issued	=451
No. of Inspections Conducted	=100

3.10 Room Plan Certification & Consultancy on radiation safety

a) 26 X-ray room plans were certified with necessary recommendations for both government and private sector institutions to construct CT, Mammography, Fluoroscopy, Dental and General Radiography facilities.

b) Plans of Oncology Complexes of following hospitals were evaluated for radiation protection and necessary wall thicknesses were computed to limit radiation leakages. Necessary recommendations were given to draw the plans to meet the AEA radiation protection requirements.

(i)Teaching Hospital, Kandy
(ii)Teaching Hospital, Jaffna

3.11 Training and Awareness Programmes

a) Conducted National Training Course on Radiation Protection in Diagnostic and Interventional Radiology for 23 Nurses in Hospitals.

b) Conducted National Training Course on Radiation Safety in using Radioisotopes for Research and Industrial applications. There were 30 participants.

c) Conducted one day training course for Radiographers in Uva Province on radiation safety during Deyata Kirula exhibition in February 2011.

d) Awareness programs on Nuclear Technology were conducted in line with Dayate Kirula exhibition a. in Anuradhapura (for 400 A/L students) b. in Moneragala (for 200A/L students) and c. in Polonnaruwa (for 150 A/L students)

e)Conducted an awareness programme on the use of Nuclear Technology for 400 A/L students in Matara district on the request made by Rahula College , Matara.

f)Conducted a National Training Course on Radiochemical Analysis under IAEA SRL/09/009 TC Project for 16 participants including 05 from Universities.

g)Conducted one day seminar on Radiation Safety for 20 Navy Maritime Trainers attached to Trincomalee Navy Base.

h)An Awareness Programme on Radiation Protection was conducted for 30 trainees of Western Naval Command, Colombo Port.

i)An awareness programme on Radiation Protection was conducted for 60 trainee Public Health Inspectors attached to the National Academy of Health.

3.12 Waste Management Facility at AEA

a) Waste disposal / storage facility at AEA has been upgraded with physical protection under the US GTRI program.
b) Five sources found at Ceylon Steel Corporation Ltd, during search operation, was installed at this storage facility.

3.13 Income Generation

License Charges	= Rs.3,627,742.23
Import / Export Charges	= Rs. 372,162.79

Training of Personnel	= Rs. 322,503.62
Inspection Charges / Other Income	= Rs. 3,049,125.37
Total Income	= Rs. 7,371,534.01

4. Human Resources Development and International Cooperation

The Authority functions as the national focal point for the International Atomic Energy Agency (IAEA) and coordinates preparation of National Project Concepts online using PCMF (Project Concept Management Framework). PCMF is a web based internet platform where Member States are advised to submit national and regional projects using this internet platform. During the period seven National Technical Cooperation Project Concepts have been formulated with the assistance of other National Institutions. Preparation of the National Project Concepts was done according to the Country Programme Framework (CPF) and national strategic planning documents such as Mahinda Chinthanaya Forward Vision. The project concepts were up-loaded to the IAEA – PCMF for upstream Planning for 2012/2013, biennium project cycle.

The name of the projects and the institutes are as follows:

Project No.	Title	Institute
SRL 0010	Strengthening the Radiation Safety Programme and Nuclear Analytical Capabilities of the Nuclear Research Centre.	Atomic Energy Authority
SRL 1007	Strengthening of Non-Destructive Testing (NDT) through the Establishment of an Accredited National Center for NDT	Atomic Energy Authority
SRL 2008	Supporting Energy Planning and a Pre-Feasibility Study for Nuclear Power and Human Resources Development in Nuclear Power Engineering	Ceylon Electricity Board and Department of Electrical Engineering, University of Moratuwa
SRL 2009	Assessing Nuclear Raw Material (Uranium and Thorium) Potential and Identifying Geological Causes of Radiogenically Hazardous Areas	Geological Survey & Mines Bureau
SRL 5043	Supporting the Operation of a Gamma Irradiation Facility for Preservation of Food, Sterilization of Medical Products and Quarantine of Fruits	Atomic Energy Authority

SRL 5044	Supporting a Feasibility Study Using the Sterile Insect Technique (SIT) for Integrated Control of Mosquitoes	Anti Malaria Campaign, Department of Health
SRL 6032	Upgrading Nuclear Medicine Diagnostic Imaging Facilities at University of Peradeniya	Nuclear Medicine Unit, Faculty of Medicine, University of Peradeniya

The Authority has Updated data-bases containing information on areas of applications relevant to 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 125 Nominations from national institutions for IAEA, RCARO, and MEXT Programmes.

During the period a list of National Resource Institutes was also prepared. The Authority was able to obtain training opportunities for 76 nos. of Sri Lankan Scientists and Researchers. The selected officials were trained at institutions of excellence in the fields of Industry, medicine, agriculture, in Member States of the IAEA where radiation technology is used.

Arrangements are being made to further develop the list of national resource centers and included in the CPF during the process of review and revision of the CPF.

Arrangements are being made for Improvement of facilities to manage and utilize information related to IAEA Technical Cooperation (TC) Programmes with the use of IAEA web based platform to monitor and submission of TC Projects. The PCMF web base was further utilized for submission of project concepts and TCPRIDE was used for project monitoring and to obtain information relevant for various purposes, at AEA. The web based internet platform is widely used for the Technical Cooperation Programmes. IAEA In touch internet platform is used for the uploading of fellowship and scientific visit applications.

Systematic implementation of the Technical Cooperation projects-
IAEA has approved 05 new projects to be implemented during the period 2010/2011. During the period 2010, there were 10 active projects, 32 active regional projects and international projects.
The Authority has achieved more than 90% of implementation rate at the end of 2011 on overall implementation of the TC projects. The Authority provided logistic support to Coconut Research Institute, University of Kelaniya to obtain Technical Cooperation support for TC projects. A new project SRL/9/009 has been obtained to AEA. Assistance were provided to University of Kelaniya to implement two national TC projects

4.1 Human resources development and staff as at 31st December 2011

The Authority also managed to provide staff skill Development programmes for 09 AEA officials and management assistants at local national training institutions to enhance their skills in the respective field of activities.

Staff at 31st December 2011-

Chairman	
Executive Director	
Executives - Scientific	24
Managerial	07
Technical Assistants	11
Management Assistants	25
Office Aids/ Drivers/ Electrician	18
Total	87

5. Activities of the General Scientific Division (GSD)

5.1 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.

5.1.1.Maintenance of Nuclear Electronic Equipments/Services

a.Maintenance services: Repair of nuclear instruments/reinstallation of software/performance testing carried out by the GSD in 2011 were 48
b.The number of software and hardware maintenance of Computers and IT, network related services to AEA were 112.

c . Samanalawewa leak detection Experiment:

Nuclear Instrumentation Expert Group of the GSD, handled the responsibility of instrumentation part (which is the most important part of this activity) in Samanalawewa leak detection activities and all performance testing of equipment, used for the measurements which were carried out at the site were done by them.

5.2 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.

5.3 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 & radiation protection.
The Secondary Standard dosimetry laboratories in general provides link with International measurement system 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 is essential for implementation of Radiation Protection Programme in the country, to ensure the radiation safety of workers, public and the environment, to measure that accurate radiotherapy doses are deliverd to cancer patients, and there by 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 system of measurements. Continual development of capabilities is necessary to adopt the current development in this filed. This laboratory has been accredited.

Services/work:

1. Radiation dosimetry calibration services were provided to several private and government institutes in the year 2011. The number of radiation monitoring instruments calibrated was 59.
2. Therapy calibration service was provided to Cancer Unit at Tellippalai Hospital, Jaffna for calibration of the instrument and establishment of Co-60 clinical beam for cancer treatment. Verification of the accuracy of Co-60 beam output was carried out.
3. Regular Maintenance of Reference and ancillary equipment.

4. A TC project was submitted and approval was obtained for 2012-2014 cycle for the development of dosimetry calibration.
5. Continual improvement of Quality Management System of SSDL is being carried out.

5.3. ICT applications:

1. New 4MB broadband Data line facility was established to improve the internet access.
2. Maintenance of the Website and network was carried out by the Head of the division with the assistance of the other members of the division who are involved in other activities too.

3. Development of a new website for AEA (www.aea.gov.lk) has been completed with the assistance of the Information and Communication Technology Agency (ICTA) through its e-Sri Lanka program.

5.4 Personal Monitoring Service:

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 to monitor occupational ionizing radiation exposures, to radiation workers island-wide, using thermoluminescent dosimeters (TLDs).

Number of Personal Monitored for occupational exposure to Ionizing Radiation

Monthly/Bi- Montly- 933

5.5 Environmental Monitoring Programme in Sri Lanka - work carried out in 2011 by GSD

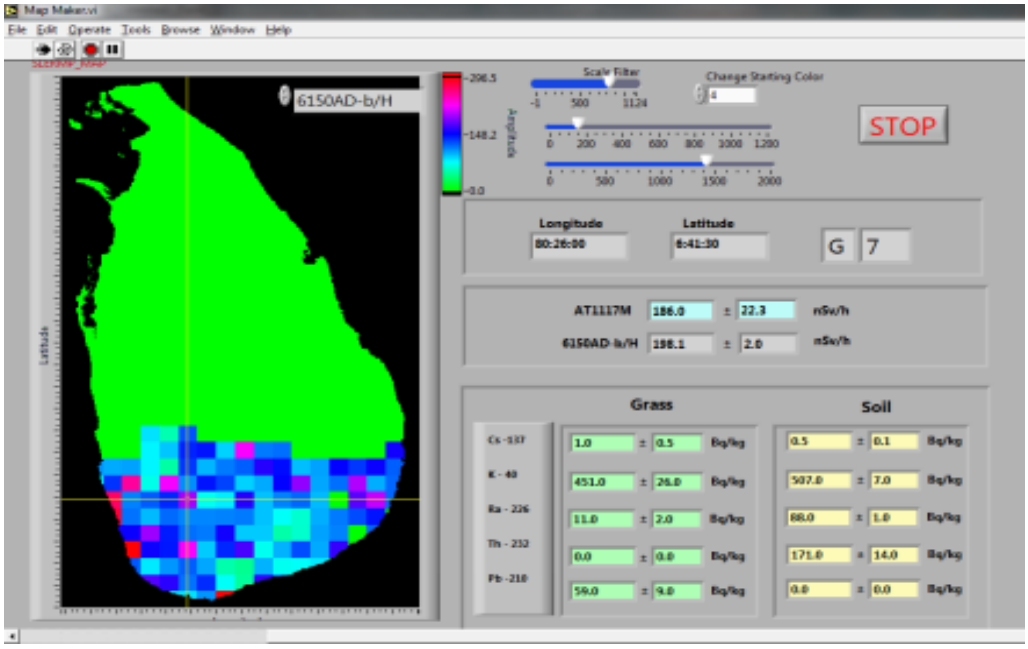


Fig No. 04: Shaded areas in the map denote locations where radioactivity/ radiation levels are measure

Environmental Radiation Monitoring, for the establishment of Baseline data, on environmental radiation, was carried out. This is a project carried out in collaboration with the Radiation Protection Division, General Scientific Division and Life Science Division. GSD has planned to obtain dose rate measurements and collect soil samples at 75 locations in 2012.

1. So far out of the 400 locations (400 locations have been selected to represent the whole country) 125 have been completed.
2. A software program has been developed to visualize the data on Sri Lanka Map.

5.6 Emergency preparedness Project (IAEA funded Project coordinated by the Radiation Protection Division)- Under this project it is planned to install an on-line Radiation monitoring System, to obtain data to a central location (AEA). GSD will provide technical support service for installation and maintenance of the system including data collection and analysis.

GSD provides instrumentation support in the field to carry out in-situ gamma spectroscopy measurements on

- 23 locations to covering Negambo, Kalpitiya, Mannar, Poonarin and Jaffna areas.
- 8 Locations to monitor the effect of Fukushima reactor accident (under the guidance of IAEA TECDOC -1092)

The GSD Provide expert knowledge to analyze all the spectrums and data reporting.

Fig NO. 05: Pins I ndicate Locations where radioactive in-situ analysis were carried out

5.7 Radon Monitoring Programme in Sri Lanka – For the implemtation of the Radon measuring programme in Sri Lanka, assistance from Nuclear Institute of Radiological Science (NIRS) and the University of Tokyo Japan has been obtained. This programme is being carried out in collaboration with the Institute of Fundamental studies (IFS).

RADEUT 50 kits, received under the above programme for radon monitoring, were placed at selected locations in Sri Lanka, for a 6 month period of measurements.

5.8 Thorium resources finding project –

Mapping the dose rate distribution pattern of selected NORM areas was started

The above work has been completed in Uswelakeiyawa NORM area and Gamma spectroscopy In-situ measurements at 14 locations were carried out from Mattakkuliya to Pitipana to identify the natural radionuclide activities in **Uswelakeiyawa NORM area**

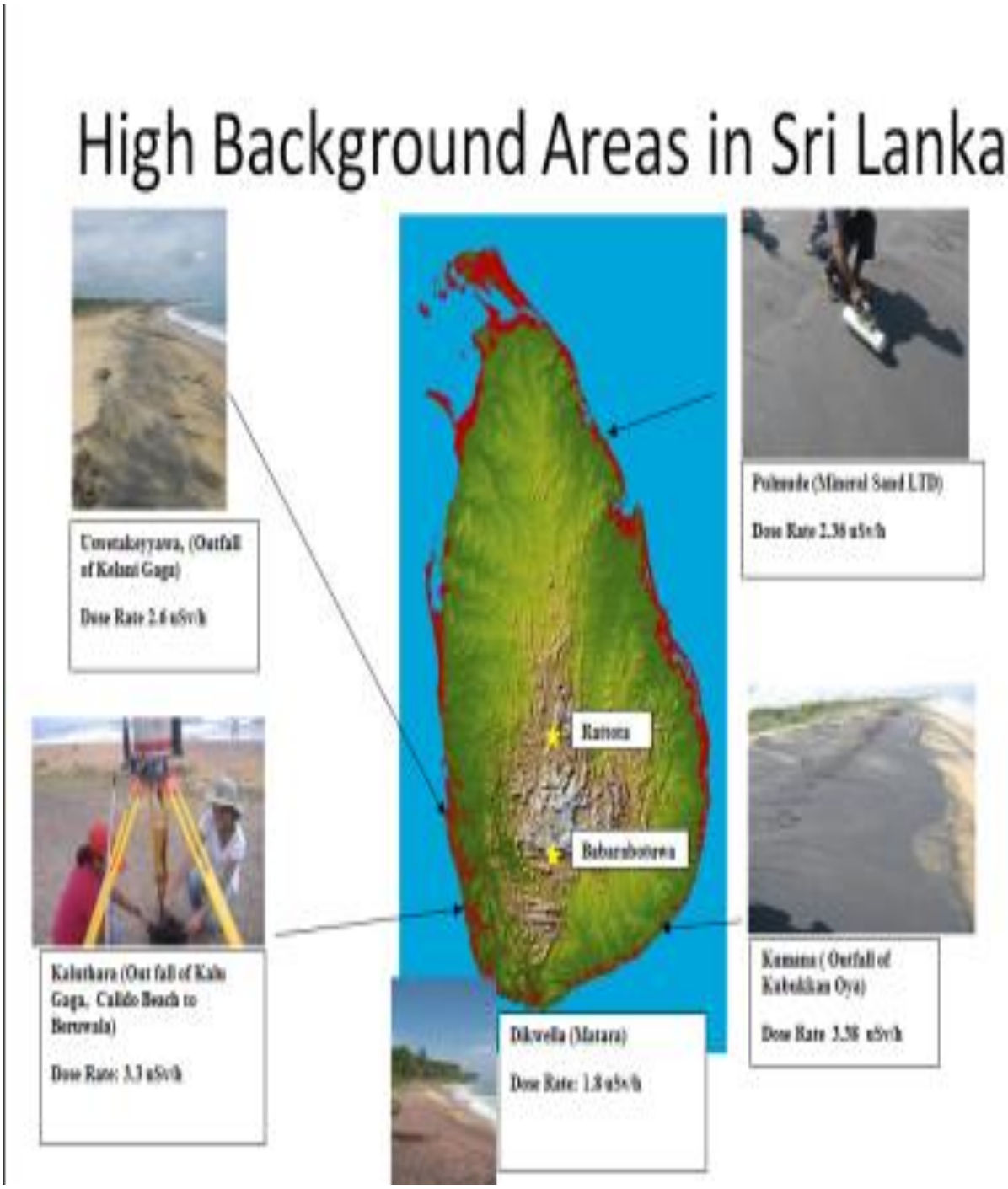


Fig No. 06 High Radiations Background areas

6. Non-Destructive Testing (NDT)

NDT section launches its activities in three directions.

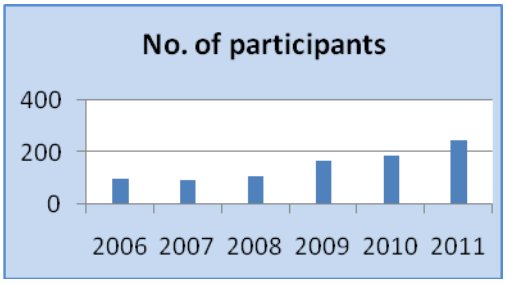
1. NDT Manpower Development Programme
2. Provision of NDT Services
3. Development activities.

6.1 NDT Manpower Development Programme:

Non Destructive Testing (NDT) section of AEA annually conducts training programsmes on non-destructive testing. As a result of the training provided by the NDT section of AEA, a number of private and public sector organizations are able to establish NDT programmes or upgrade existing facilities in their respective organizations. The NDT training courses conducted by the NDT section of AEA has also 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).

249 personnel participated in NDT training courses and workshops during 2011 and an income of **Rs 2,454,946.40** was generated from same.

Year	No of Participants
2006	101
2007	95
2008	107
2009	168
2010	186
2011	249



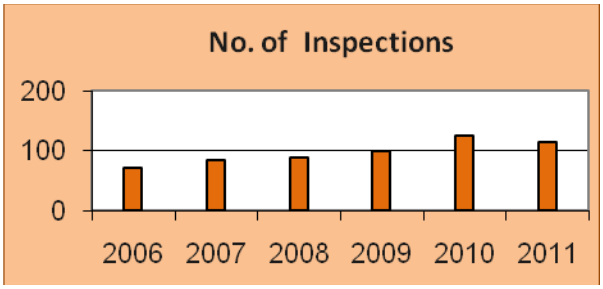
Year	Income (Rs.) (Including Tax)
2006	653,631.25
2007	651,618.75
2008	1,624,395.00
2009	2,099,249.36
2010	2,285,018.40
2011	2,454,946.40

6.2 Provision of NDT Services

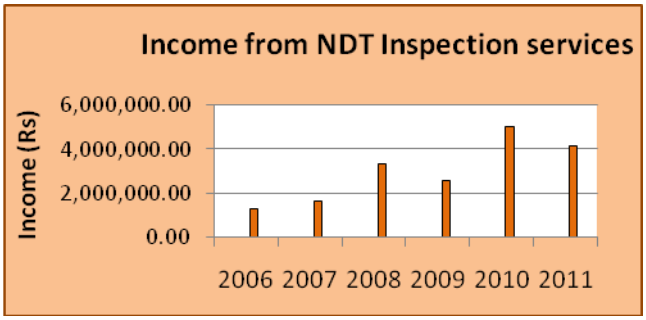
AEA provides NDT inspection services to industry in order to detect defects in machinery and metallic components to ensure industrial safety to improve industrial productivity.

AEA provided **114** NDT inspection services to industries in 2011 and an income of Rs**4,131,592.25** was generated from same.

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

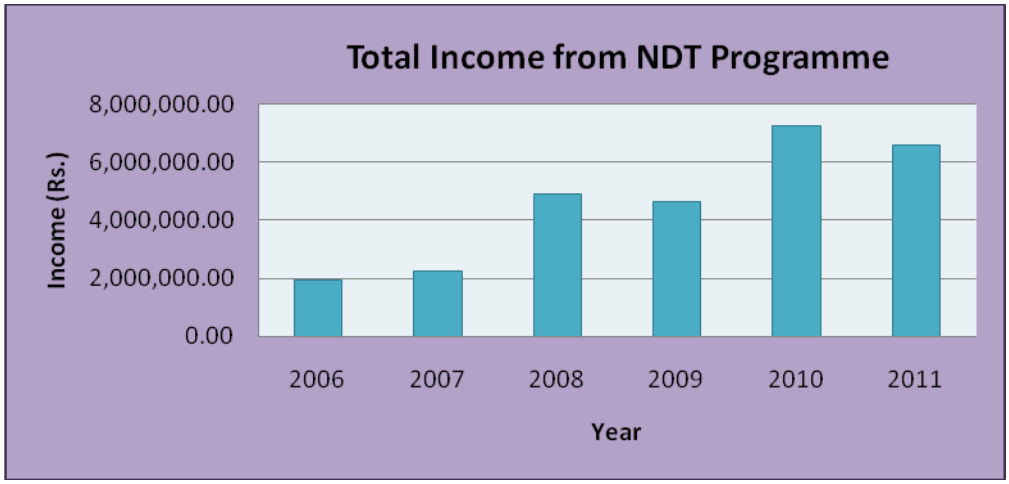


Year	Income (Rs.) (Including tax)
2006	1,280,846.60
2007	1,613,998.70
2008	3,291,833.61
2009	2,563,970.58
2010	4,985,180.23
2011	4,131,592.25



The total income generated by the NDT Project for the year 2011 is Rs. 6,586,538.65

Year	Income (Rs)		Total (Rs) Incl. Tax
	TC/WC	Inspections	
2006	653,631.25	1,280,846.60	1,934,477.85
2007	651,618.75	1,613,998.70	2,265,617.45
2008	1,624,395.00	3,291,833.61	4,916,228.61
2009	2,099,249.36	2,563,970.58	4,662,919.94
2010	2,285,018.40	4,985,180.23	7,270,198.63
2011	2,454,946.40	4,131,592.25	6,586,538.65



6.3 Development activities

a) Establishment of CBNDT:

The AEA established 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".

The objective of this CBNDT is the development of policies and principles regarding the content and functioning of a certification system for qualification and certification of NDT personnel. Accreditation of this CBNDT is in progress.

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 with the title "National Centre for Non- Destructive Testing (NCNDT)" under the AEA in a separate location by 2014. This Centre is planned to have well equipped accredited laboratories as per international accepted standards providing all kinds 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 etc., with the objective of reaching break-even within few years for recovering the state investment. Final intention will be to become a non-loss making entity with pride and commitment.

Some of the techniques planed to be established 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.

With the above objectives the AEA purchased the land, allocated funds, selected a contractor, architectural and engineering designs were completed and the Minister of Economic Development laid the foundation stone for this National Centre for NDT on 07th October 2011. In addition IAEA assistance in the form of equipment, expert services and training has been approved through TC Project No. SRL2010003.

AEA is planning to complete this project by the end of 2013.

Proposed NDT Centre after completion

7.0. Radiation Processing

7.1. Radiation Processing with Gamma Radiation

a). 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. Fungicides Product for Agriculture Applications by using Low Molecular Weight Chitosan Derivatives.
3. Combine Product for Agriculture Applications by using above developed Fungicides and Plant growth promoter/elicitor.

Fig No. 7: Fungicide Final Product (Chitosan Derivative)

Fig No. 8:Plant growth Promoter Eliciter Product (Oligo-Chitosan Derivative)

Fig No.9: Tomato

Fig No.10: Rambutan

Following steps were successfully completed during the developments of above new products.

Title of the Project: "Supporting Radiation Processing of Natural Polymers for Agricultural and environmental remediation"

Project No.: RAS/8/109

Target of the Project: Produce Green Radiation Processing Product for Agricultural, Environmental & Industrial Application.

Brief Description: Chitin is the second abandon Natural Polymer in the world. Chitin is extracted from Shells such as Crabs, Shrimps, and Prawns …etc and it is used to produce the Chitosan. Chitosan is a long chain polymer and it's maximum molecular weight is in the range of 500-800kDa. Different molecular weights show different properties and features and these features can apply for different useful applications in the fields of Agriculture, Environment, and Medicine…etc. Steps were taken to produce new Products oriented to those applications.

Achieved Milestones of This research work:

Extracted Chitosan by using Local Shrimp shell waste. (Laboratory scale)
Studied the variation of Viscosity average molecular masses of Chitosan with different Irradiation Doses and build-up theoretical basement to produce the required lower Molecular weight Chitosan by using Raw Chitosan. This is the most important part of this Research Project and these results were very useful to obtain expected molecular Weight correctly from Raw Chitosan.

Prepared Different Chitosan Fungicide Products by using Different Chitosan Derivatives and studied the most effective Chitosan Fungicide through in-vitro Studies with different fungi. (Such as *Nephelium lappaceum* (Powdery mildew), *Colletotricum gloeosporioides***,** *Alternaria solani*, *Anthracnose, …etc*.) and selected the best Chitosan Fungicides product.
Selected Chitosan Fungicides (Fig No.07) were studied in Research Field Applications and Farmer Field Application by preparing Chitosan Fungicide in large scale at AEA Sri Lanka.
Prepared different types of Plant Growth Promoters/Elicitor product using different Molecular weight Oligo-Chitosan derivatives.(Fig No.08)
Effects of Chitosan Plant growth Promoter/Elicitor were studied by Pot experiments and Research Field Applications(Fig No.09: The best plant growth promoter/ elicitor was used to study its effect on Tomato and Rambutan) and selected the best Chitosan Plant growth Promoter/Elicitor.

Selected Plant Growth Promoters/Elicitor product was studied in Research and Farmer Field Application by preparing Plant Growth Promoters/Elicitor product in large scale at AEA, Sri Lanka.

Future plans for the year 2012:
Dragon fruit is the fruit of several cactus species, most importantly in the genus Hylocereus. It is native to South and Central America, belongs to perennial epiphytic plant. It is also commercially cultivated in Vietnam, Thailand, Malaysia and Israel as well as in Sri Lanka.
Now dragon fruit is also popular in Sri Lanka. It can be cultivated in low country wet zone, intermediate zone as well as dry zone with the irrigation facilities.
In Sri Lanka Dragon Fruit Association has been established. There are more than 100 farmers in this Association.

Dragon Fruit Association has reported to AEA that they have found several Dragon Fruit diseases created by some Fungi and Bacteria and they are rapidly spreading. Anthracnose, Xanthomonas campestris, Phomopsis, Oidium and Dothiorella are the main fungi and Bacteria in Dragon Fruit cultivation and these fungi and Bacteria are unable to be controled by using any licensed fungicide in the world.
Under this critical stage, Sri Lanka Dragon Fruit Association has requested help from the Radiation Processing Section of the Atomic Energy Authority to control these Dragon Fruit diseases.

According to their request AEA is carrying out research related to further development and Modifications of the above developed Products and continuing to control fungus and Bacteria such as Anthracnose, Xanthomonas campestris, Phomopsis, Oidium and Dothiorella in Dragon Fruit cultivation.

Fig No.11: Dragon Fruit

Fig No.12: Fungus attacked Dragon Furit Farm

b) Furthermore a collaborative research project (under the IAEA/RCA Project RAS/8/109) was also carried out during the year 2011 with the following institutions of the Department of Agriculture-

1. Rice Research and Development Institute (RRDI), Batalagoda, Ibbagamuwa
2. Regional Rice Research and Development Centre (RRRDC)
3. Horticultural Research and Development Institute (HORDI), Gannaoruwa, Peradeniya

Research investigations carried out at the Regional Rice Research and Development Centre (RARDC), Bombuwela-

Rice diseases are one of the major biological constraints that cause considerable yield losses in Sri Lanka. Among the diseases, Rice blast, Sheath blight and Grain discoloration are the economically important rice diseases particularly in the Wet Regions of Sri Lanka. The use of resistant varieties against rice blast disease (caused by *Pyricularia grisea*) is more practicable. However fungicide application is immensely required when the disease outbreaks are seen under favorable weather conditions. Since no disease resistant rice varieties have been identified for sheath blight disease (caused by *Rhizoctonia solani*) fungicide application is the only solution for management of this disease. The Grain discoloration disease (caused by *Fusarium, Helminthosporium, Curvularia* & *Colletotricum* spp.) affects the quality of the seeds more than the yield. The Grain discoloration problem is even very severe in the Low Country Wet Zone (LCWZ) due to favorable weather conditions. More than 50% of the farmers spray agrochemicals to overcome these problems. Therefore environmental safety chemicals are immensely important to manage diseases.

The Irradiated Chitosan products developed by Atomic Energy Authority were tested in the Phase II in 2011.The growth of Rhizoctonia solani and Pyricularia grisea were studied in vitro

on potato Dextrose Agar (PDA) medium and Rice polish Agar (RPA) medium respectively mixing with the Irradiated chitosan solutions. The concentrations of 100,200, 300, 400, and 500 ppm of the irradiated chitosan solutions and buffer solutions were tested against said pathogens with

recommended fungicide. The colony diameters after different treatments were measured daily. These results indicated that when the concentration of the chitosan solution was increased, growth of the fungi was also decreased. Further more, efficacy of this Irradiated chitosan solutions were tested under pot experiments, research field and nursery level conditions against sheath blight disease and upland rice blast nursery against blast disease and research field conditions. These results were also confirmed that irradiated chitosan could suppress the development of lesions of blast and sheath blight disease of rice.

Impact of oligo chitosan on growth and yield of Rice
Collaborative Institute - Rice Research and Development Institute, Batalagoda

The objective of this study was to

- Evaluate agronomic and physiological aspects on growth and yield under field condition
- Popularize eco friendly technologies and minimize cost of cultivation.

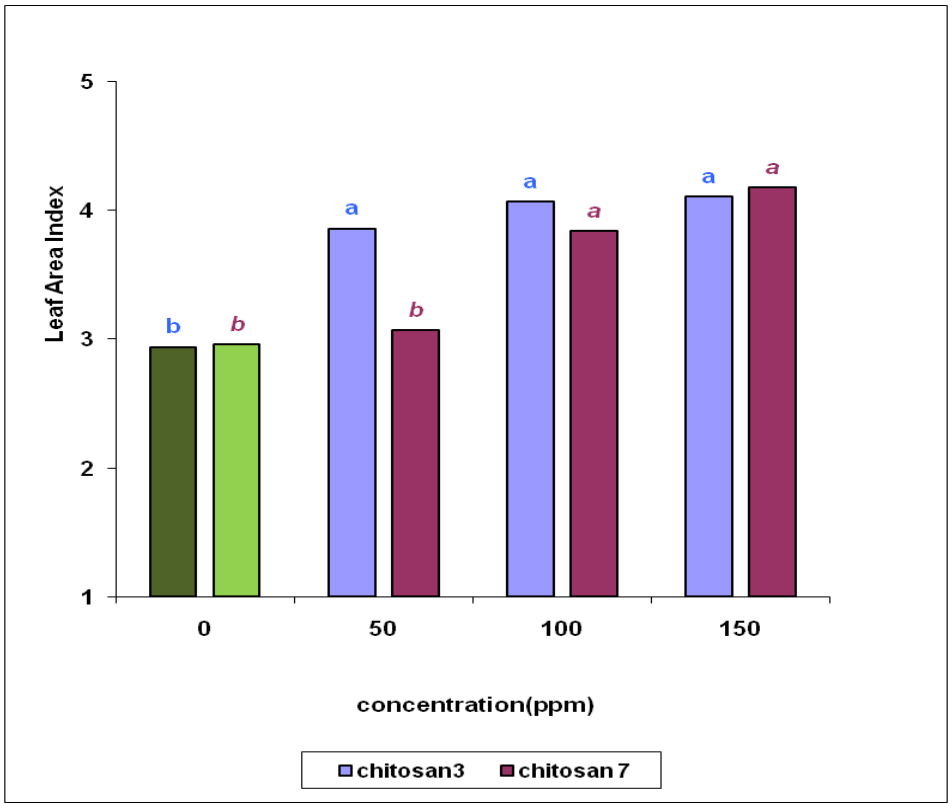


Figure No.13: Effect of chitosan on Leaf Area Index (LAI) at heading stage

As shown in Fig.13, 50,100,150 ppm chitosan 3 & 100,150 ppm chitosan7 recorded highest LAI than control. It seems that higher chitosan concentrations are viable in increasing LAI.

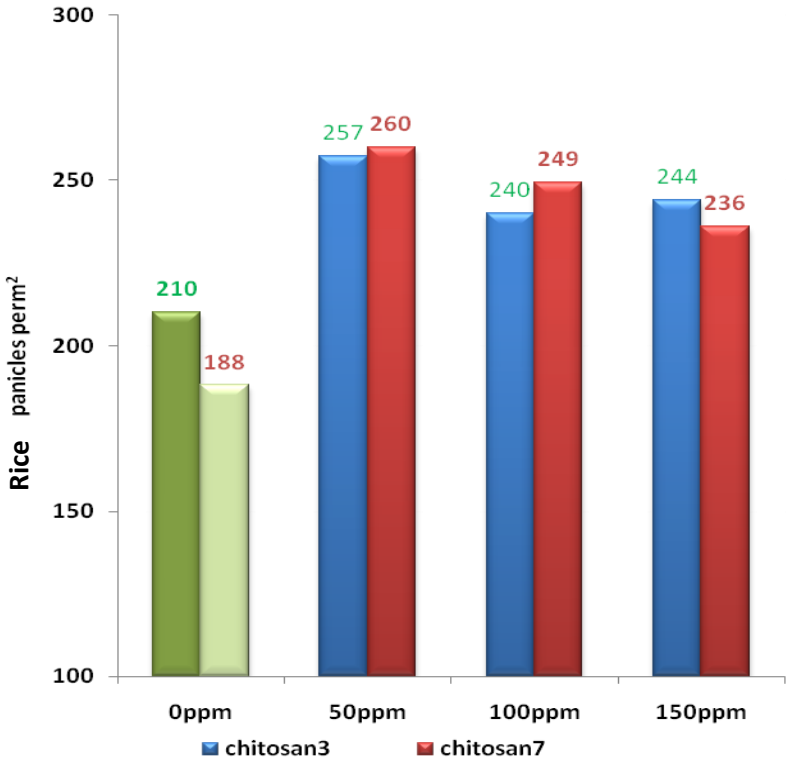


Figure No.14: Effect of chitosan on yield component at harvest-panicles/m2

As shown in Figure No.14,

- Both type of chitosan increased panicles per m2 compared to control

At 50ppm highest panicles/m2 recorded

- Chitosan type7

-Seed soaking of promote root and shoot growth at seedling stage

-LAI, total biomass, panicles/m2 promoted

- Chitosan type3

-LAI, panicles per m2, filed grains% and 1000 grain weight increased

- 150ppm promote vegetative growth and yield component

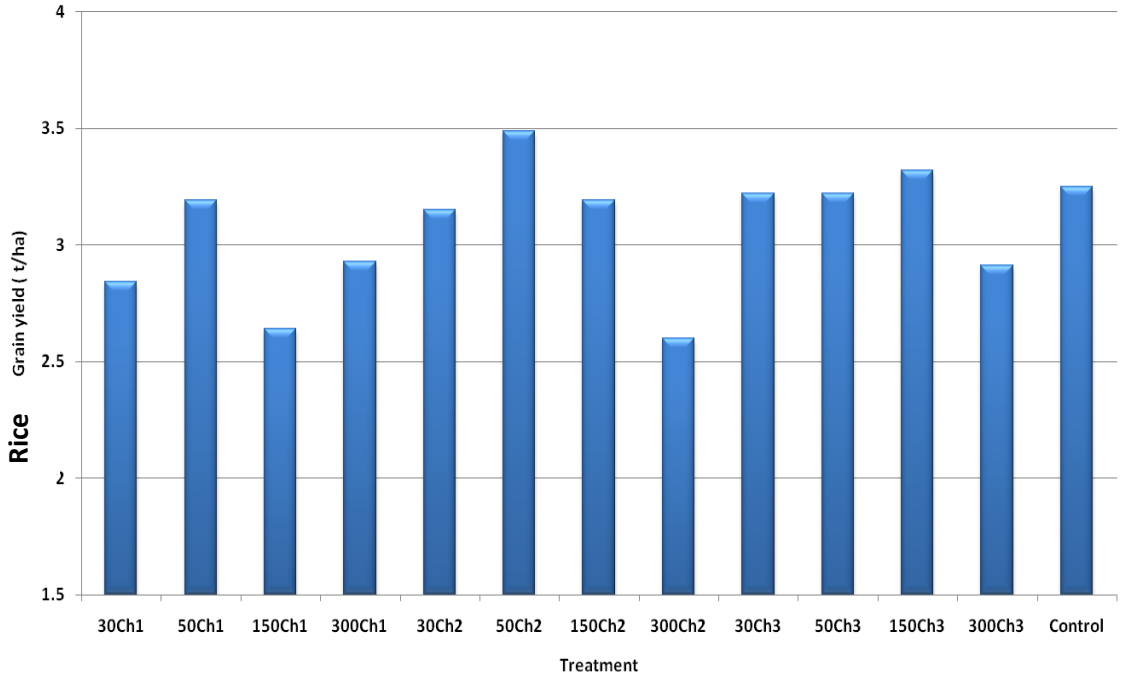


Figure No.15: Chitosan treatments using different types of chitosan

Rice grain yield were different when different chitosan treatments were applied

Present status of the project

- At the last progress review meeting, it was decided to prepare project proposals with estimated budget for farmer level field trials in different locations in Sri Lanka for further evaluation of chitosan products.
- A preliminary discussion was held with the Registrar of Pesticide, Department of Agriculture regarding the procedures of obtaining product license as a natural bioactive substance for plant growth promotion and elicitization.
- According to the results of Phase II (2011) the final choitosan products were prepared with some improvements by the AEA team. It is a chitosan fungicide/ Oliogomer mixture.,
- Framer Field trials have been started at different locations for rice, tomato and capsicum. The MOU for farmer field trials was signed in September 2011.

c). **Establishment of a Multi- purpose Gamma Irradiation Facility (MGIF)**

A new Project Director was appointed in January 2011. AEA members attended several Technical Evaluation Committee meetings and at these meetings they reviewed the tender documents supplied by the Central Engineering Consultancy Bureau (CECEB) who is the consultant of the Project. Tender appeared in the Daily News, Dinamina, and Thinakaran in March and a pre-bid meeting and a site visit was held to brief the bidders. Thirteen bids were received for main civil construction and these were evaluated by the team headed by AEA.

The AEA members also attended the Steering Committee meetings held at the Ministry of Technology and Research (MOTR) and at these meetings issues arisen with respect to the project were discussed.

The AEA requested the Project budget to be released to the AEA at the special meeting held at the Department of Treasury and it was decided that MOTR would construct the facility and hand it over to AEA for operation.

The Management Services Department gave its' approval to AEA for recruitment of immediate cadre requirements necessary for operation of the facility.

Received the approval for Cost Revision of the project and to award the main civil contract to M/s. Sierra Construction (Private) Limited.

The site was handed over to the Civil Contractor and the agreement between Sierra and MOTR was signed in September.

The International Atomic Energy (IAEA) Expert mission (Mr.Manfred Frenzel) was arranged under the Technical Cooperation (TC) Programme to carry out the following activities.

- Examine the Quality Assessment /Quality Control Plan submitted by SYMEC Engineers (India) Pvt. Ltd and submit recommendations for change, if any
- Identify the critical stages of the installation process (during and after the civil construction) at which expert assistance is required and the nature of expertise that is required at each such stage.
- Submit recommendation as to:

  a) The quality of the components of the plant supplied/ to be supplied, by SYMEC for the facility, and

  b) Whether such components conform to the specifications set out in the Agreement, with SYMEC or where specifications are not set out in the Agreement, to decide whether standards are acceptable for Gamma Irradiator Plants:

  c) The Quality of the work carried out by SYMEC with respect to the installation of the plant.

Second IAEA expert mission was requested for inspection of pre- shipment of embedded parts from SYMEC, India who is the supplier of the irradiator.

A new Project Proposal for the Project Cycle 2012-2013 was submitted to IAEA Technical Co-operation Program, for obtaining Technical support such as expert mission, manpower training etc. for the establishment of the Multipurpose Gamma Irradiation Facility.

Progress review meetings with Siera (contractor), CECB, MOTR and AEA were held at the Project site (Biyagama) and Ministry of Technology and Research.

Construction of the temporary fence was completed in October. Temporary water supply and electricity were obtained for the site. Construction of security hut and retaining wall were started. Shoring for pool excavation and concreting of footings of the building of selected columns were completed.

Fig No. 16: Construction of MGIF in Progress

8. Isotope Hydrology Programme

Activities/Projects carried out

1. Samanalawewa Tracer Test
2. Groundwater quality deterioration study – Puttalam (continuing study)
3. Groundwater recharge study – Matale (continuing study)
4. Workshops/Awareness programmes - 01 – at University of Jaffna
   - 01 – at Foundation Institute
5. Establishing stable isotope measurements facility in the Isotope Hydrology Laboratory – AEA by installing a Liquid Water Isotope Analyzer.
6. Training provided – 01 undergraduate
   01 NIATA trainee
7. Number of samples analyzed - Stable Isotopes(D & ^{18}O) - 330
   Tritium - 98

8.1 SAMANALAWEWA TRACER TEST

INVESTIGATION OF THE LEAKAGE MECHANISM OF SAMANALAWEWA RESERVOIR BY RADIO TRACER TECHNIQUE – AUGUST-SEPTEMBER 2011

Background

Samanalawewa Reservoir was built in 1991 and it developed a leakage in the right bank during its initial filling in the same year.

Fig No.17: Samanalawewa Dam

Fig No. 18: Amount of leakage -2.5 m^3/S

Two remedial measures were taken and both failed

1. Grout curtain in 1992 (Rs 4 Billion in 1992)
2. Wet blanketing in 1999 (Rs 4 Billion in 1999)

An isotope study was carried out by the Atomic Energy Authority in 2002 and found a unique aquifer system in the right bank which was initially identified as two separate water bodies.

Long-term ground water monitoring data has provided a better evidence of leakage water inlet points at the right bank according to Dr Kamal Laksiri, Civil Engineer from Ceylon Electricity Board.

OBJECTIVE OF THE TRACER STUDY

Locating leakage water inlet points at the right bank of the Samanalawewa reservoir

TECHNIQUE USED

Radiotracer was pumped in to a suspected zone at the right bank and then monitored the movement of the tracer in surrounding waters.

Radiotracer:	**Iodine –131, Activity – 1 Ci, Gamma Energy – 364 keV,t1/2 – 8 days**
Suspected Zone:	Elevation is 415 m above mean sea level and the distance from the dam is around 100 m.

There were three online monitoring stations. One was in leakage outlet and other two were in grouting tunnel. Also water samples were collected hourly from six different locations including leakage outlet, bore holes in the right bank, piezometers in the grouting tunnel and in reservoir. The above monitoring and water sampling were carried out for complete 3 days.

The scientists, technicians, engineers and supporters involved in this process were about 40 in number and they worked on shift basis with their maximum possible strength to make this event a success.

Tracer Injection – by pumping in to the reservoir

Fig No. 19:Suspected zone

Fig No.20:Pumping set-up

Fig No. 21:Pipes laid

Tracer Monitoring

Tracer Monitoring Locations

Online Monitoring Station – NaI Scintillation Detectors

Fig No.23:Leakage Outlet Detectors and data recording system

Fig No.22:Borehole sampling – 150 m deep

Conclusions

A water ingress zone (Fig No. 19) in the right bank is located around the tracer injection area

Ingressed water flows in to the leakage outlet

Leakage does not behave as a tube flow from reservoir to the outlet point

Water ingresses in to the right bank in above area, moves in different paths with different distances before coming to the outlet point.

Residence time of above ingression water in the right bank is less than 20 hrs.

8.2 GROUNDWATER QUALITY DETERIORATION STUDY – PUTTALAM

Collaborative Institutes – Water Resources Board (WRB)

Fig No. 24:Puttalam Site

This is a continuing project and sampling was done in February 2011 (after monsoon) and August 2011 (before monsoon) in Puttalam. The total number of water samples collected in one season was 60 including groundwater, surface water and rainwater samples for isotope and chemical analysis.

8.3 GROUNDWATER RECHARGE STUDY – MATALE

Collaboration Institute – National Building Research Organization (NBRO)

Fig No. 25: Sampling site at Matale and NBRO

This is a continuing project and sampling was done in October-November 2011. The total number of water samples collected was 40 including groundwater, surface water and rainwater samples for isotope and chemical analysis. Rain water collecting setup was installed at NBRO office premises -Matale.

8.4 WORKSHOPS/AWARENESS PROGRAMMES

(a) University of Jaffna

Fig No. 26: Workshop in Progress

This workshop (Fig No.26) was conducted on 05th December 2011 on isotope hydrology for the staff of the faculty of Science, University of Jaffna.

(b) Workshop held at the Sri Lanka Foundation Institute

This workshop was conducted on 22nd December 2011 on Basic Principles and Applications of isotope hydrology for the hydro-geologists from water related institutes. About 40 hydro-geologists from Water Resources Board and National Water Supply and Drainage Board participated.

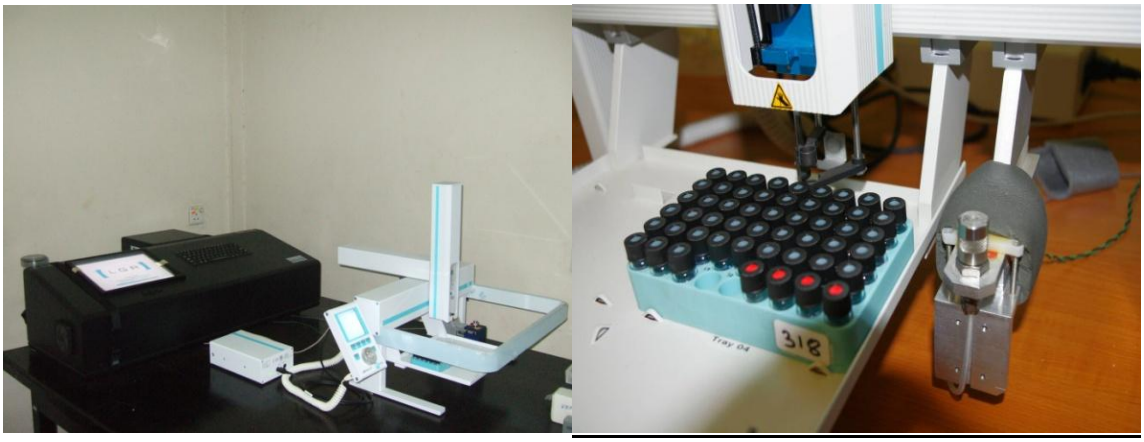


Fig No.27: **ESTABLISHING A STABLE ISOTOPE MEASUREMENT FACILITY IN THE ISOTOPE HYDROLOGY LABORATORY – AEA BY INSTALLING A LIQUID WATER ISOTOPE ANALYSER.**

A Liquid Water Isotope Analyser with laser technology was installed in January 2011 for stable isotope measurements (2-H and 18-O), in water samples. At present the Isotope Hydrology laboratory is capable of measuring basic isotopes (including already available 3-H system) in this field and samples are not needed to be sent to overseas laboratories any more. Therefore the research opportunities can be broaden other than providing the services for water sector institutes, researchers and universities.

9. LIFE SCIENCES DIVISION

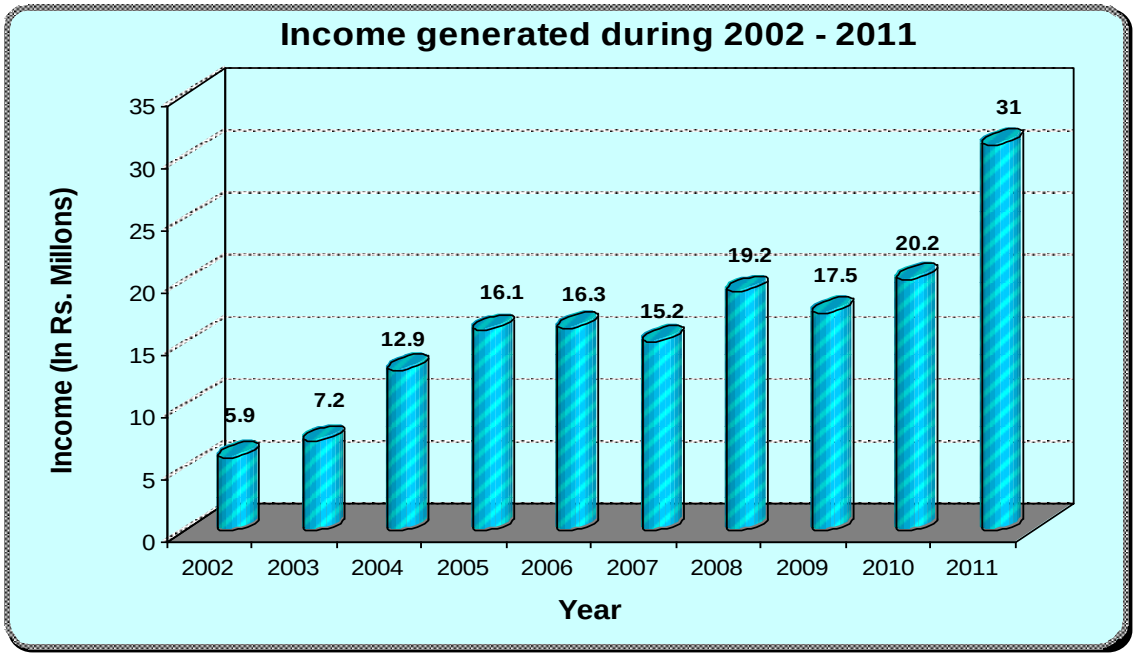
9.1 LIFE SCIENCES DIVISION (LSD)

The overall objective of the LSD is to serve the nation by supporting to solve health related problems, enhancing the food productivity and to monitor and improve the environmental conditions using Nuclear Technology. The LSD involves in R&D activities and provides technical support to conduct R&D activities of other Institutes. In addition LSD is conducting analytical service to ensure the quality of food products with respect to radioactive contamination,

9.2. Use of Gamma Spectrometry for Analytical Services and Research & Development activities.

9.2.1 Analytical Services by Gamma spectrometry,

LSD has analyzed 7650 samples of imported milk products and certain export products for radioactivity contamination in 2011 compared to 5966 samples in 2010. The income generated by this service in 2011 was SLR 31 million, inclusive of VAT. The number of samples analyzed and income generated during the past ten years are given below.



FigNo. 28: Income generated from food testing service.

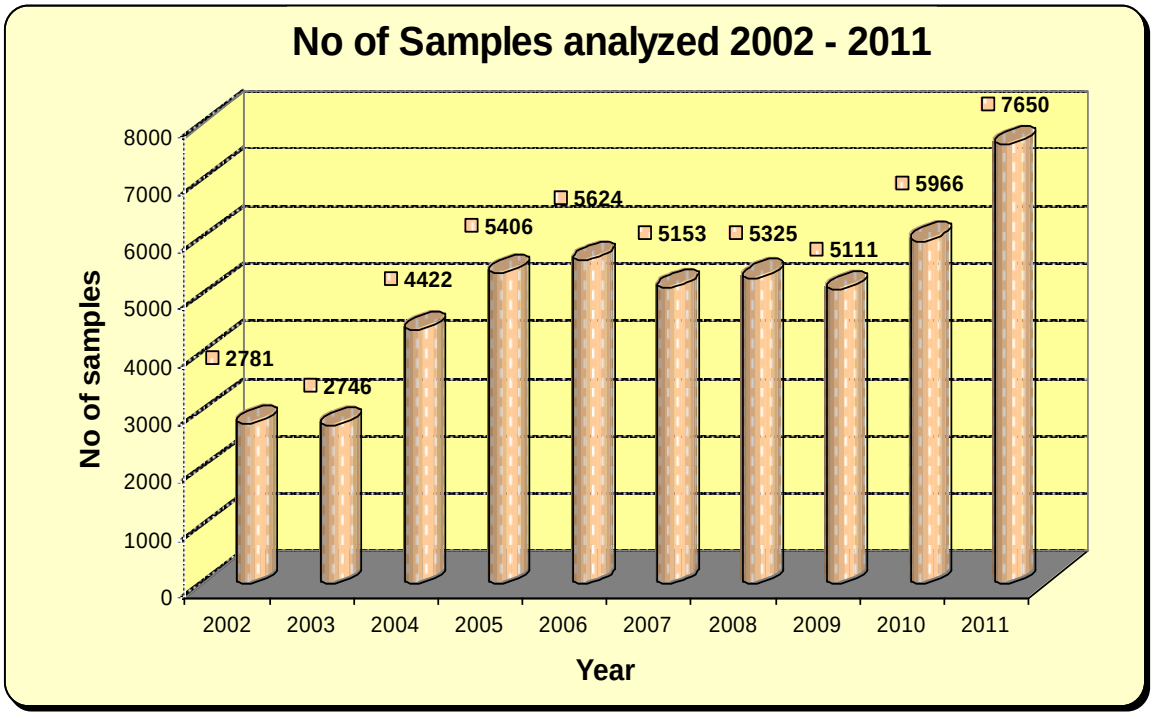


Fig No.29: samples analyzed during 2002 - 2011.

9.3

Research and Development activities using Gamma spectrometry

a)Monitoring of Environmental Radioactivity levels was continued in collaboration with other divisions. The purpose of this project is to establish the national baseline levels for radioactivity present in the environment and mapping of natural radioactivity in the country.

Major activities carried out during the year 2011 under the environmental radioactivity monitoring program are as follows:

-71 Samples (soil, grass) were collected in selected sites. (root 3 & 4)

-In-situ dose measurement was carried out in site (root 3 & 4))

-Radio activity measurements were completed in root 3 & 4.

38 Samples of different matrices (apart from food items) were analyzed for radioactivity using HPGe facility and an income of SLR 31,053,382 (inclusive of VAT) was generated from these services. 100 samples of several on-going projects (Marine pollution study, Environmental Radioactivity Monitoring project etc) were analyzed during the period of 2011.

b) A joint project was carried out with Radiation Protection Division (RPD) and Cancer hospital, Maharagama for long-term survey of radio iodine (I-131) contamination in the environment due to the hospital waste water discharge. Under this project,

- 19 samples of water, plant materials and sediments were collected and analyzed using gamma spectroscopy (HPGe detector system) for I-131radioisotope. - The final report of I-131 contamination in environment has been submitted to the Cancer hospital, Maharagama through RPD

c)Environmental monitoring program for possible radioactivity contamination after Fukushima Nuclear Power Plant.

A special programme was initiated after the Nuclear Power Plant (NPP) accident which took place in Japan on 11th March 2011. This activity was commenced by AEA in collaboration with other national institutes such as Marine Environment Protection Authority, National Aquatic Resources Agency, etc. In addition to in-situ radioactivity monitoring, samples collected from around the Island and from sea were screened for possible radioactivity contamination. These samples included; air-particulates, rain water, milk, vegetation, food items imported from potentially contaminated areas of the world. This activity has now been systematically done through the regional project RAS/7/021 initiated by IAEA, in order to assess the possible impact of Fukushima NPP accident. However, this activity is being mainly carried out with respect to marine environment.

c) In addition to the above, several samples such as Mineral sand and Coal ash fly received from industries (Pulmodai and Norochcholai) were analyzed for occupational health reasons and environmental pollution assessment etc.

9.4 Analyticval Services and R&D activities by XRF/TXRF Technique

9.4.1 Analytical Services by XRF/TXRF Techniques

XRF services for analysis of heavy metals were provided to government and commercial sector institutes, for different sample matrices as per their requirements.

78 samples (alloys, plant materials and mineral types) were analyzed. Income generated was Rs. 0.5M including VAT.

9.5 R&D activities by XRF/TXRF Techniques

Project	Involved institutions	Current status by Dec2011
3. Environmental exposure to heavy metals and chronic kidney disease in Sri Lanka	Life Science Division/AEA Faculty of Medicine/U.SJAPURA Faculty of Medicine/U.Kelaniya Alabama University/ USA	67 blood samples and 67 scalp hair samples collected from Kidney patients attending Hospitals in Medirigiriya and Medawachchiya All blood samples collected were tested for serum creatinine levels. Blood samples have been digested for TXRF analysis and quantitative analysis was delayed as TXRF detector is out of order. (steps are being taken to repair it) 39 soil samples have been analyzed for heavy metal concentrations
4. Association between heavy metals and endometriosis: a preliminary study	LSD/AEA Faculty of Medicine/U.SJAPURA Faculty of Medicine/U.Kelaniya	Complete and reported data for 150 blood and tissue samples (for heavy metal concentrations). Rs 0.4M was received from the university of Sri J'Pura for this work which is already published.(this project is over by now)

5. Air Pollution Monitoring Programme in collaboration with the Central Environmental Authority (CEA).	Central Environmental Authority (CEA).	The data obtained complements the on-going National Air Quality Monitoring Programme for the preparation of Air Quality Management strategies. Major Accomplishments are; Continuation of sampling at the fixed air quality monitoring station at AEA premises using Gent air-sampler. - 19 samples were collected in AEA site. Sampling was interrupted in AQM station due to technical problem in the site maintaining. - 118 fine and coarse filters were analyzed including backlog filters using ED-XRF. -- Research paper was published on "Characterization and Source Apportionment of fine particulates pollution in Colombo, Sri Lanka" (APR-D-10-00066R1) in a Journal in April 2011 -A new sampling station has been identified in Kandy
6. A study of the concentration levels of essential and potentially toxic elements in rice and major food items used by Sri Lankans	LSD/Atomic Energy Authority Depart. Geology /University of Peradeniya	In the first sampling spell 22 rice samples have been collected from selected locations in NC province. In the second sampling spell another 25 samples have been collected. samples have been digested and waiting for the TXRF instrument to be repaired.

7. A study of land based pollutants in the Bolgoda lake and coastal marine environment	LSD/Atomic Energy Authority Marine Pollution Prevention Authority (MEPA)	The LSD of AEA was involved in a regional project on "Harmonizing nuclear and isotopic techniques for marine pollution management at the regional level – RAS/07/019" in collaboration with MEPA. The objective of this project is to use nuclear analytical technique to find the land base pollutant sources responsible for heavy metal pollution in the marine environment. As an initial step five sediment cores were collected by project team of AEA and MEPA from Bolgoda Lake, which discharges into the sea. Each core sample, ~40cm long, was analyzed by XRF for elemental concentrations and 16 samples were analyzed for Pb-210 isotopic data using HPGe detector. The project activities are continuing.

9.6 QA/QC Programme

Quality system was further strengthened in Nuclear Analytical Techniques Laboratories under the requirements of ISO/IEC 17025. Quality Manual and Standard Operating procedures were implemented under these requirements – ISO/IEC 17025.

Low Level Counting Lab:

Regular quality control measures were taken by the laboratory so that to maintain the accreditation status. It was also possible to extend its scope of the analysis during 2011. The methodology required for fish sample analysis by Gamma spectroscopy was established and the method was accredited for the analysis of Cs-137 and Cs-134.

Participated in a Proficiency Testing program organized by IAEA (PT..CODE…)

XRF Lab:

a.i.1.a. The Scope of Accredited XRF technique was as follows:
a.i.1.b. "Multi elemental Analysis (Ti, Mn, Fe, Zn, Ni, Cu, Pb, Br Sr and Rb) in Air filters, Soil, Sediments, Alloys and plant material using X-ray Fluorescence analysis"
a.i.1.c. Implementation of the internal audit scheme - Gamma/XRF--2 internal audits were carried out.

-Two surveillance assessments of low-level counting lab and XRF lab were carried out by SLAB and Non conformances raised by SLAB were corrected for continuing the Laboratory accreditation.

-Completed the accreditation for XRF and low level counting laboratories, ISO 17025

The activities related to Quality system in NAT laboratory are as follows: The laboratories participated in the three PT testing programs for Radioactivity and XRF technique organized by IAEA and Malaysian Institute of Nuclear Technology to validate the analytical testing and the laboratories (spec and XRF) demonstrated satisfactory performance in these PT testing.

- 2 internal audits were carried out.
- Two surveillance assessments of low-level counting lab were carried out by Sri Lanka Accreditation Board (SLAB) and Non conformances raised by SLAB were corrected for continuing the Laboratory accreditation.
- Completed the accreditation processes for XRF and low level counting laboratories

Alpha Lab

Participated in two Proficiency Tests (PT) to validate the methods for alpha analysis.

9.7 Establishment of Alpha Spectrometry

The establishment of alpha spectrometry laboratory has been completed using limited resources available. Radiochemical separation procedures for U-238, Th-232, and Po-210 have been established.

The radiochemical separation procedure for Polonium in soil/sediment was established. Newly appointed scientific officers were trained in radiochemical separation techniques and alpha spectroscopy.

The limited instruments available for alpha spectrometry are the major constraints to develop this field.

9.8 Training Activities

LSD Provided training opportunities to undergraduate students from different universities during their vacation periods. These students were supported to carry out their vacation training at LSD. The postgraduate students were also given opportunities to use the available research facilities to carry out their research projects using nuclear analytical techniques. The following Universities sent students to LSD of the AEA, for training, in the year 2011.

University of Peradeniya: For training in TXRF analysis for Rice and Blood samples.

University of Kelaniya : XRF analysis of different samples.

University of Sri Jayawardhanapura

University of Moratuwa.

10. Public Awareness Programmes:

Activities carried out in connection with Fukushima Nuclear Power Plant accident -

An Emergency Centre in connection with Fukushima Nuclear Power accident was open round the clock at AEA and those who arrived from Japan and neighbouring countries were instructed to come directly to AEA to check their whole body radiation levels.

This message was delivered through the public address system and leaflets were also distributed at the Katunayake International Airport to inform these passengers how to come to AEA premises.

Two press conferences were also held in the aftermath of the accident to educate the general public on the possible impact of the accident and all steps were taken to protect them.

Many press articles, TV and radio programmes were used to educate the general public on Nuclear technology

AEA participated in "Deyata Kirula–2011", "Vidulka–2011", "Inco–2011", Medical Exhibition–University of Kelaniya and many School Exhibitions.

Lectures and Seminars were held in five National Schools

11. Library and Information Centre-

Information on Nuclear Science and technology was provided to scientists of the AEA and other institutes, engineers, general public and school children using the available resources in the library and information Centre.

12. Youth Nuclear Society of Sri Lanka-

Special Presentations on "Electricity Generation using Nuclear Power"
- To the newly assigned Engineers of Ceylon Electricity Board on 20th January 2011.
- To the Debate Team of Kuliyapitiya Central College for the participation in "Sirasa", Islandwide Inter-school Debate Competition on 22nd March 2011. And to the Debate Team of D. S. Senanayake College, Colombo 08 for the participation of "Sirasa" Islandwide Inter-school Debate Competition on 02nd May 2011.(Winner of the Competition

Conducted Lectures on "Electricity Generation using Nuclear Power " & "What actually happened in Fukushima Daiichi NPP on 11th March 2011".
For R/ Bodimalu Vidyalaya, Embilipitiya on 25/03/2011 (Teachers/Teaching Instructors who came from Embilipitiya Education Zone)
- For Mo/ Sevanagala Maha Vidyalaya on 07/07/2011
- Science Day of R/ Kalawana National School on 22/09/2011

Press Releases / Newspaper Articles

- "Vidusara" Newspaper : Role of the Youth Nuclear Society of Sri Lanka & Enrollment of Members

- ITN TV Cooperation, Derana TV, Sirasa TV, Swarnavahini TV, Max FM, SLBC, Lakehouse newspaper Ltd.,"Lankadeepa" Newspaper etc.
"What really happened on Fukushima Daiichi NPP on 11th March 2011."

- Nawayugaya Magazine/ "Vidusara" Newspaper

"Electricity Generation using Nuclear Power"

• On the Invitation of French Nuclear Professionals-Young Generation (SFEN-JG), Mr. Malinda Ranaweera participated on "Atoms for the Future 2011" in Avignon & Paris, France from 07th -10th November 2011

Fig No. 30:A Seminar Organized by the Youth Nuclear Society In Progress

Fig.No. 31: AEA Stall at Dayata Kirula -2011Exhibition

13. Research Work Conducted at the Atomic Energy Authority- Research Papers Published by AEA:

Citation Publications:

a) Characterization and source apportionment of particulate pollution in Colombo, Sri Lanka. Atmospheric Pollution Research 2 (2011) 207- 212. –M.C. Shirani Seneviratne , Vajira Ariyaratna Waduge, Lakmali Hadagiripathira, Sisara Sanjeewani, Thilaka Attanayaka , Nuwan Jayaratna ,Philip K. Hopke

b) Long-range transport of soil dust and smork pollution in the South Asia region. Atmospheric Pollution Research 2 (2011) 151- 157. - Bikis A.Begum, Swapan K. Biswa, Gauri G. Pandit, I.V. Saradhi, Shahida Waheed, Nalla Siddique, Manikku wadura, M.C.Seneviratna,David D. Cohen, Andreas Markwitz, Philip K. Hopke

c) A determination of air pollution in Colombo and Kurunegala, Sri Lanka, using enrgy dispersive X-ray fluorescence spectrometry on *Heterodermia speciosa*. Turk Bot 35 (2011)

439-446- Patikiri Arachchilage Don Hasanthi Nayana Gunathilaka, Rathnayaka Mudiyanselage Nissansala Subodhani Randeniya, Mohomed Mujithaba Mohomed Najim,Shirani Senevirathne.
d)Use of irradiated chitosan to manage the important rice diseases in Sri Lanka.-Mithrasena J.P.K., Silva J.N., Adikari A.A.W.P., Gunawardena U.K.D.N.,Kulathunge S.S., De Silva K.R.C., Disssnayake C.K. (2011 Feb.) International conference on Biotechnology for better tomorrow, Dr. Babasahed Ambedkar Marathwada University, Aurangabad, Maharashtra, India.

e) An investigation on the trends of water quality deterioration in northwestern limestone aquifer system in the Puttalam region based on stable isotope composition"-G R R Karunarathne (WRB), A S M N B Samarakoon (WRB), D G L Wickramanayake (AEA) and E A N V Edirisinghe(AEA)-Proceedings on "Workshop on Challenges in Groundwater Management in Sri Lanka" 15th March 2011-organised by Water Resources Board and Dam Safety and Water Resources Planning Project.

TECHNICAL COOPERATION PROJECTS

2011

ATOMIC ENERGY AUTHORITY

Foreign Seminars / Training Programmes / Workshops / Meetings
January-December 2011

Se. No	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
1.	10/50	Mr.E.V.P.J.N. Edirisinghe	Technical Assistant, NDT Section, AEA.	Announcement on Reactor Plant Safety Course FY 2010 , JapanWinter Course	11.01.2011 04.02.2011	Japan	Gov. of Japan
2.	11/02	Mr. C. Kasige	Head, General Scineitific Division, AEA.	IAEA/RCA Meeting of the Project Lead Country Coordinators to Design the RCA Projects for 2012/2013 TC Cycle (RAS/0/058)	14.02.2011 18.02.2011	Vienna, Austria	IAEA
3.	11/03	Mr. J.M.A.C. Jayasinghe	Executive Director / CEO, AEA	TC Project Design Workshop for Asia and the Pacific (RAS/0/058)	31.01.2011 04.02.2011	Vienna, Austria	IAEA
4.	11/03	Mr. H.G.P. Karunarante	Head, HRD & International Division,AEA	TC Project Design Workshop for Asia and the Pacific (RAS/0/058)	31.01.2011 04.02.2011	Vienna, Austria	IAEA
5.	11/04	Mr. V.A. Waduge	Senior Scientific Officer, Life Science Division, AEA.	IAEA/RCA Final Progress Review Meeting (RAS/7/015)	14.03.2011 18.03.2011	Vienna, Austria	IAEA
6.	11/11	Mr. H.L. Anil Ranjith	Head, Radiation Protection Division, AEA.	The Second Meeting of the Project Coordination of TC Project RAS/9/059 "Strengthening Nuclear Regulatory Authorities in the Asia and the Pacific Region"	29.03.2011 31.03.2011	Vienna, Austria	IAEA
7.	11/13	Mr.D.G.L.Wickramanaya ke	Head, Industrial Applications Division,AEA.	33rd Meeting of National RCA Representatives	12.04.2011 15.04.2011	Bali, Indonesia	Govt. of Sri Lanka
8.	11/17	Mr. K.R.C. de Silva	Scientific Officer, Radiation Processing Section,AEA.	IAEA/RCA Training Course on Basic Radiation Processing of Polymers and Recycling of Polymeric Waste by Using Radiation Technology (RAS/8/109)	23.05.2011 27.05.2011	Jeongup, Jeollabuk-do, Korea	IAEA
9.	11/19	Mr. K.N.R. Fernando	Senior Scientific Officer, Radiation Protection Division, AEA.	Regional Training Course on Control of Public Exposure due to Radioactive Releases to the Environment, (RAS/9/056)	10.05.2011 13.05.2011	Amman, Jordan.	IAEA
10.	11/21	Mr.K.K.P.I.K. Kadadunna	Senior Scientific Officer, Radiation Protection Division,AEA.	Regional Training Course on NORM (RAS/9/053)	29.05.2011 02.05.2011	Abu Dhabi, United Arab Emirates.	IAEA
11.	11/21	Ms. Asuntha Balasooriya	Scientific Officer, General Scientific Division, AEA.	Regional Training Course on NORM (RAS/9/053)	29.05.2011 02.05.2011	Abu Dhabi, United Arab Emirates.	IAEA

Foreign Seminars / Training Programmes / Workshops / Meetings
January – December 2011

Se. No.	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
12.	11/22	Mr. S.S.K. Kolambage	Scientific Officer, Radiation Protection Division, AEA.	Regional Meeting on the Licensing of Nuclear Installations, Including Review and Assessment Aspects of the Application Process (RAS/9/059)	06.06.2011 10.06.2011	Vienna, Austria.	IAEA
13.	11/22	Mr. T.H.R. Silva	Scientific Officer, Radiation Protection Division, AEA.	Regional Meeting on the Licensing of Nuclear Installations, Including Review and Assessment Aspects of the Application Process (RAS/9/059)	06.06.2011 10.06.2011	Vienna, Austria.	IAEA
14.	11/26	Mr. J.M.A.C. Jayasinghe	Executive Director / CEO, AEA.	Asia and the Pacific National Liaison Officers (NLO) Meeting (RAS/0/058)	14.06.2011 17.06.2011	Vienna, Austria	IAEA
15.	11/26	Mr. H.G.P. Karunarante	Head, HRD & International Division, AEA	Asia and the Pacific National Liaison Officers (NLO) Meeting (RAS/0/058)	14.06.2011 17.06.2011	Vienna, Austria	IAEA
16.	11/27	Mr. V.A. Waduge	Head, Life Science Division,AEA.	IAEA/RCA Meeting for Executive Management Meeting for Environmental Agencies and National Nuclear Institutes,	08.08.2011 12.08.2011	Manila, Philippines.	IAEA
17.	11/29	Mr. M.A.K. Jayatilaka	Scientific Officer, NDT Section, AEA.	IAEA/RCA Training Course on the ISee and aRTist Software for DIR Image Analysis and Interpretation (RAS/8110)	25.07.2011 29.07.2011	Kuala Lumpur, Malaysia	IAEA
18.	11/29	Mr. C. Seneviratne	Scientific Officer, NDT Section, AEA.	IAEA/RCA Training Course on the ISee and aRTist Software for DIR Image Analysis and Interpretation (RAS/8110)	25.07.2011 29.07.2011	Kuala Lumpur, Malaysia	IAEA
19.	11/31	Mr. H.L. Anil Ranjith	Head, Radiation Protection Division, AEA.	IAEA/RCA Final Progress Review Meeting (RAS/9/042)	05.09.2011 09.09.2011	Danang, Vietnam	IAEA
20.	11/32	Mrs. S.S. Kulatunge	Section Head, Radiation Procesing Section, AEA.	IAEA/RCA Training Course on Train the Trainer Course for Trainers for Quarantine Inspectors (RAS/5/050),	19.09.2011 23.09.2011	Kuala Lumpur, Malaysia	IAEA
21.	11/33	Mr. T.M.R. Tennakoon	Section Head, NDT Section, AEA.	IAEA/RCA Technical Meeting on Guidelines for Training / Examination and Certification of Candidates in the DIR and CT Techniques (RAS/8/110)	05.09.2011 09.09.2011	Jakarta, Indonesia	IAEA

Foreign Seminars / Training Programmes / Workshops / Meetings
January – December 2011

Se. No.	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
22.	11/38	Mrs. D.C.K.K. Dissanayake	Senior Scientific Officer, Life Sciences Division, AEA	IAEA/RCA Regional Training Course and Demonstration on Up Sealing of Radiation Modification of Polymer for Agricultural Applications : Plant Growth Promoters and Plant Elicitors (RAS/8/109),	17.10.2011 21.10.2011	Beijing, China.	IAEA
23.	11/40	Mr. S.S.K. Kolombage	Scientific Officer, Radiaiton Protection Division, AEA	Nuclear Safety Seminar 2011 – Administration Course	28.11.2011 16.12.2011	JAEA, Japan	JAEA
24.	11/40	Mr. R.M.M.P. Ranaweera	Technical Assistant, Radiation Processing Section, AEA	Nuclear Safety Seminar 2011 – Administration Course	28.11.2011 16.12.2011	JAEA, Japan	JAEA
25.	11/42	Mr. D.G.L. Wickramanayake	Head, Industrial Applications Division, AEA	IAEA/RCA Regional Executive Management Meeting for Policy Makers and End Users on Super Water Absorbent, Toxic Metal Absorbent and Plant Growth Promoter for Agriculture Applications (RAS/8/109)	03.10.2011 07.10.2011	Takasaki, Japan	IAEA
26.	11/42	Mrs. S.S. Kulatunge	Section Head, Radiation Procesing Section, AEA.	IAEA/RCA Regional Executive Management Meeting for Policy Makers and End Users on Super Water Absorbent, Toxic Metal Absorbent and Plant Growth Promoter for Agriculture Applications (RAS/8/109)	03.10.2011 07.10.2011	Takasaki, Japan	IAEA
27.	11/43	Mr. V.A. Waduge	Head, Life Science Division, AEA.	IAEA/RCA Initial Project Planning Meeting (RAS/7/021),	29.08.2011 02.09.2011	Sydney, Australia.	IAEA
28.	11/45	Mr. V.A. Waduge	Head, Life Science Division, AEA.	2nd Research Coordinators Meeting (RCM) under CRP 1576 on "Microanalytical Techniques based on Nuclear Spectrometry for Environmental Monitoring and Material Studies",	10.10.2011 14.10.2011	Vienna, Austria.	IAEA
29.	11/46	Dr. R.L. Wijayawardana	Chairman, AEA.	55th Annual Regular Sessions of the International Atomic Energy Agency (IAEA) General Conference, 19-23 September 2011 and the 39th RCA General Conference Meeting, 16th September 2011	19.09.2011 23.09.2011	Vienna, Austria.	Govt. of Sri Lanka

Foreign Seminars / Training Programmes / Workshops / Meetings
January – December 2011

Se. No.	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
30.	11/46	Mr. J.M.A.C. Jayasinghe	Executive Director /CEO, AEA.	55th Annual Regular Sessions of the International Atomic Energy Agency (IAEA) General Conference, 19-23 September 2011 and the 39th RCA General Conference Meeting, 16th September 2011	19.09.2011 23.09.2011	Vienna, Austria.	Govt. of Sri Lanka
31.	11/46	Mr. H.G.P. Karunarante	Head, HRD & International Division, AEA.	55th Annual Regular Sessions of the International Atomic Energy Agency (IAEA) General Conference, 19-23 September 2011 and the 39th RCA General Conference Meeting, 16th September 2011	16.09.2011 23.09.2011	Vienna, Austria.	Govt. of Sri Lanka
32.	11/47	Mr. J.M.A.C. Jayasinghe	Executive Director /CEO, AEA.	IAEA Technical Meeting on World Thorium Resources	17.10.2011 21.10.2011	Thiruwanathapuram, India	Govt. of Sri Lanka
33.	11/48	Mr. V.A. Waduge	Head, Life Science Division, AEA.	IAEA/RCA Final Progress Assessment Meeting (RAS/7/019)	01.11.2011 04.11.2011	Monaco	IAEA
34.	11/50	Mr. E.A.N.V. Edirisinghe	Scientific Officer, Industrial Application Division, AEA.	IAEA/RCA Final Progress Review Meeting (RAS/8/108)	14.11.2011 17.11.2011	Sydney, Australia	IAEA
35.	11/54	Mr. U.W.K.H. de Silva	Senior Scientific Officer, Radiation Protection Div., AEA.	Regional Training Course on Orphan Source Search (RAS/9/054)	07.11.2011 11.11.2011	Manila, Philippines	IAEA
36.	11/56	Mr. R.M.M.P. Ranaweera	Technical Assistant, Radiation Processing Section, AEA.	Atoms for the Future 2011	07.11.2011 10.11.2011	Paris, France	Govt. of Sri Lanka
37.	11/57	Mr. E.A.N.V. Edirisinghe	Scientific Officer, Industrial Application Division, AEA.	Technical Meeting on Laser Based Stable Isotope Analysis User Group	09.11.2011 11.11.2011	Vienna, Austria.	IAEA
38.	11/58	Mr. H.L. Anil Ranjith	Head, Radiation Protection Division, AEA	Regional Workshop on Development of Inspection Programs for the Physical Protection of Radioactive Source	11.10.2011 13.10.2011	Republic of Cyprus.	US Government
39.	11/58	Mr. A. Jayalath	Senior Scientific Officer, Radiation Protection Divison, AEA.	Regional Workshop on Development of Inspection Programs for the Physical Protection of Radioactive Source	11.10.2011 13.10.2011	Republic of Cyprus.	US Government
40.	11/58	Mr. K.K.P.I.K. Kadadunna	Senior Scientific Officer, Radiation Protection Division, AEA.	Regional Workshop on Development of Inspection Programs for the Physical Protection of Radioactive Source	11.10.2011 13.10.2011	Republic of Cyprus.	US Government

Foreign Seminars / Training Programmes / Workshops / Meetings
January – December 2011

Se. No.	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
41.	11/60	Mr. V.A. Waduge	Head, Life Science Division, AEA.	IAEA/RCA Meeting on Quality Management System Documentation and Utilization of Regional / Global Marine Databases (RAS/7/021), IAEA Environmental Laboratories	21.11.2011 25.11.2011	Monaco	IAEA
42.	11/61	Mr. U.W.K.H. de Silva	Senior Scientific Officer, Radiation Protection Division, AEA.	Regional Meeting on Lessons Learned in Protection of the Public and Environment from Radiation Practices (RAS/9/056),	27.11.2011 01.12.2011	Kuwait.	IAEA
43.	11/63	Mr. P.D. Mahakumara	Senior Scientific Officer, General Scientific Division, AEA.	National Institute of Radiological Sciences	31.10.2011 03.11.2011	Japan	Japanese Governmen t
44.	11/65	Mrs. A.K. Ratnayake	Senior Scientific Officer, General Scientific Division, AEA.	Regional Meeting on Occupational Radiation Protection in Emergency Exposure Situations under TC Project RAS/9/053	22.11.2011 25.11.2011	Chiba, Japan.	IAEA
45.	11/67	Mr. D.G.L. Wickramanayake	Head, Industrial Applications Division, AEA.	Regional Workshop for Development of Management Skills on Innovation, Technology Transfer and Successful Technology Licensing (STL) for Research and Development (R&D) Institutions in Asia Region (RAS/0/059)	28.11.2011 01.12.2011	Manila, Philippin es	IAEA
46.	11/67	Mr. H.M.N.R. Bandara	Administrative Officer, HRD & IC Division, AEA.	Regional Workshop for Development of Management Skills on Innovation, Technology Transfer and Successful Technology Licensing (STL) for Research and Development (R&D) Institutions in Asia Region (RAS/0/059)	28.11.2011 01.12.2011	Manila, Philippin es	IAEA
47.	11/70	Mr. E.A.N.V. Edirisinghe	Scientific Officer, Industrial Application Division, AEA.	Consultant Meeting on Current Practices and Requirements for Tritum Analyses in Isotope Hydrology	12.12.2011 15.12.2011	Vienna, Austria.	IAEA
48.	11/72	Mr. H.L. Anil Ranjith	Head, Radiation Protection Division, AEA.	ARF Workshop on Non-Proliferation Nuclear Forensics	07.12.2011 09.12.2011	Bangkok, Thailand	European Commissio n & US
49.	11/72	Mr. P.D. Mahakumara	Senior Scientific Officer, General Scientific Division, AEA.	ARF Workshop on Non-Proliferation Nuclear Forensics	07.12.2011 09.12.2011	Bangkok, Thailand	European Commissio n & US
50.	11/73	Mr. T.H.S. Shantha	Senior Scientific Officer, Radiation Protection Division,	Fourth Regional Meeting on the Implementation of the International Health Regulations (2005)	07.12.2011 09.12.2011	Bangkok, Thailand	WHO

Foreign Seminars / Training Programmes / Workshops / Meetings
January - December 2011

Se. No.	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
1	11/01	Dr. (Ms.) D.A.K. Perera	Consultant Clinical Oncologist, National Cancer Institute, Maharagama.	IAEA/RCA Training Course on Introduction to Image Based Radiotherapy (RAS/6/053)	22.02.2011 26.02.2011	Manila, Philippines	IAEA
2.	11/01	Ms. Danushiya Rajaratnam	Medical Physicist, National Cancer Institute, Maharagama.	IAEA/RCA Training Course on Introduction to Image Based Radiotherapy (RAS/6/053)	22.02.2011 26.02.2011	Manila, Philippines	IAEA
3.	11/06	Prof. Janitha Liyanage	Professor in Chemistry, Department of Chemistry, University of Kelaniya.	Regional Coordination Meeting to Review the Best Practices in Nuclear Knowledge Management under RAS/0/047	07.03.2011 10.03.2011	Chiang Mai, Thailand	IAEA
4.	11/07	Dr. E.R.S.P. Edirimanna	Research Officer, HORDI, Gannoruwa.	IAEA.RCA Final Progress Review Meeting (RAS/5/045)	21.03.2011 25.03.2011	Bangkok, Thailand	IAEA
5.	11/08	Dr. L. Watawana.	Senior Lecturer, Nuclear Medicine Unit, University of Peradeniya, Peradeniya.	RCA Regional Office (RCARO) Temporary Staff Invitation Programme	01.11.2011 28.01.2012	Republic of Korea	RCARO
6.	11/09	Dr. R.S. Wilson	Deputy Director (R&D), Industrial Technology Institute, Colombo 07.	IAEA/RCA Final Progress Review Meeting (RAS/5/046)	21.03.2011 25.03.2011	Beijing, China	IAEA
7.	11/14	Ms. N.S. Somarathna	Programme Assistant, Rice Reserach & Development Institute, Batalegoda.	Announcement of MEXT Nuclear Researchers Exchange Programme 2011 (NSRA)	05.09.2011 26.11.2011	Japan	MEXET
8.	11/16	Mr. K.W.N.B. Weragama	Director, Emergency Operations, Desaster Management Center, 498, R.A. de Mel Mawatha, Colombo 03.	IAEA/RCA Meeting for Emergency Management Decision Makers (RAS/9/042)	11.07.2011 15.07.2011	Vienna, Austria	IAEA
9.	11/17	Dr. S.D.M. Chinthaka	Senior Lecturer, Department of Chemistry, University of Jayawardenepura	IAEA/RCA Training Course on Basic Radiation Processing of Polymers and Recycling of Polymeric Waste by Using Radiation Technology (RAS/8/109)	23.05.2011 27.05.2011	Jeongup, Jeollabuk-do, Korea	IAEA
10.	11/23	Ms. M.D. Yoga Milani	Research Officer, Industrial Technology Institute, Colombo 07.	IAEA/RCA Training Course on Advanced Applications of Radiation Processing for Recycling of Polymeric Waste (RAS/8/109)	04.07.2011 08.07.2011	Bangi, Malaysia	IAEA

Foreign Seminars / Training Programmes / Workshops / Meetings
January - December 2011

Se. No.	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
11.	11/23	Ms. M.P.T. Premaratne	Programme Assistant (Agri.), HORDI, Peradeniya.	IAEA/RCA Training Course on Advanced Applications of Radiation Processing for Recycling of Polymeric Waste (RAS/8/109)	04.07.2011 08.07.2011	Bangi, Malaysia	IAEA
12.	11/24	Mr. C. Weerasekera	Engineering Manager - Inspection, Ceylon Petroleum Corporation, Kelaniya.	IAEA/RCA Regional Training Course on Gamma Transmission Computed Tomography System and Image Reconstruction for Pipe Inspection (RAS/8/111)	20.06.2011 24.06.2011	Dalat, Vietnam	IAEA
13.	11/24	Mr. C.R.K. Gamage	Deputy Engineering Manager, Ceylon Petroleum Corporation, Kelaniya.	IAEA/RCA Regional Training Course on Gamma Transmission Computed Tomography System and Image Reconstruction for Pipe Inspection (RAS/8/111)	20.06.2011 24.06.2011	Dalat, Vietnam	IAEA
14.	11/27	Mr. R.S. Ariyapperuma	Chairman, Marine Environmental Protection Authority, 758, Level 2, Baseline Road, Colombo 09.	IAEA/RCA Meeting for Executive Management Meeting for Environmental Agencies and National Nuclear Institutes	08.08.2011 12.08.2011	Manila, Philippines.	IAEA
15.	11/28	Mr. M.A.M. Damith Madhuranga	Safety Engineer, Petroleum Resources Development Secretariat, No. 80, Sir Ernest de Silva Mawatha, Colombo 07.	Regional Training Course on Public Exposure to Naturally Occurring Radioactive Material (NORM) – As Related to Oil and Gas Industry (RAS/9/056)	25.07.2011 29.07.2011	Vienna, Austria	IAEA
16.	11/30	Mr. R.A.B. Thilanga,	Mechanical Engineering, Refinery Division, Ceylon Petroleum Corporation, Kelaniya	IAEA/RCA Regional Training Course on Diagnosis of Multi-phase Systems of Petrochemical Plants and Waste Water Treatment Systems Using Radiotracers Incorporation with Computer Modeling and Simulation (RAS/8/111)	19.08.2011 23.09.2011	Daejeon, Republic of Korea.	IAEA
17.	11/32	Ms. I.K. Warshawithana	Research Officer, National Plant Quarantine Service, Katunayake.	IAEA/RCA Training Course on Train the Trainer Course for Trainers for Quarantine Inspectors (RAS/5/050),	19.09.2011 23.09.2011	Kuala Lumpur, Malaysia	IAEA

Foreign Seminars / Training Programmes / Workshops / Meetings
January - December 2011

Se. No.	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
18.	11/36	Mr. S.N. Thalawala,	Staff Technical Oficer, Department of Physics, University of Peradeniya, Peradeniya.	2011 RCARO/KAERI Regional Workshop Research Reactor Utilization and Radiation Application Technology	10.10.2011 21.10.2011	KAERI, Daejeon, Republic of Korea.	RCARO
19.	11/38	Ms. Y.J.P.K. Mithrasena,	Research Officer, Regional Rice Research & Development Center, Bombuwala.	IAEA/RCA Regional Training Course and Demonstration on Up Sealing of Radiation Modification of Polymer for Agricultural Applications : Plant Growth Promoters and Plant Elicitors (RAS/8/109)	17.10.2011 21.10.2011	Beijing, China.	IAEA
20.	11/39	Mr. R.M.S. Rajakaruna	Senior State Counsel, Attorney Generals Department, Colombo 12.	First Session of Nuclear Law Institute,	19.11.2011 03.12.2011	Vienna, Austria	IAEA
21.	11/46	Hon'ble Minister Patali Champika,	Minister of Power & Energy, Colombo 07.	55th Annual Regular Sessions of the International Atomic Energy Agency (IAEA) General Conference	19.09.2011 23.09.2011	Vienna, Austria.	Govt. of Sri Lanka
22.	11/47	Mr. K.T.U.S. De Silva	Assistant Director, Geological Survey & Mines Bureau, No. 4, Galle Road, Dehiwala.	IAEA Technical Meeting on World Thorium Resources	17.10.2011 21.10.2011	Thiruwanathapuram, India	Govt. of Sri Lanka
23.	11/49	Mr. C.R.K. Gamage	Depy. Engi. Manager (Inspection), Ceylon Petroleum Corporation, Oil Refinery, Kelaniya.	IAEA/RCA Regional Training Course on Radioactive Particle Tracking Techniques for Investigating Process Hydrodynamics (RAS/8/111)	17.10.2011 21.10.2011	New Delhi, India.	IAEA
24.	11/52	Mr. N.N.I.R. Fernando	Deputy Refinery Manager (Tech) Refinery Division, Ceylon Petroleum Corporation, Kelaniya.	IAEA/RCA Final Progress Review Meeting (RAS/8/111)	12.12.2011 16.12.2011	Chiengmai, Thailand	IAEA
25.	11/53	Ms. S. Colombage	Trainee Medical Physicist, National Hospital of Sri Lanka, Colombo.	Regional Workshop on Patient Dose Assessment and Dose Management in Diagnostic and International Radiology under TC Regional Project RAS/9/055	18.12.2011 21.12.2011	Doha, Qatar	IAEA

Foreign Seminars / Training Programmes / Workshops / Meetings
January - December 2011

Se. No.	No	Name of the Officer	Post	Name of the Programme	Period	Country	Sponsoring Institute
26.	11/53	Mrs. R.L.R.A. Rajapaksha,	Trainee Medical Physicist, Lady Ridgeway Hospital, Colombo 08.	Regional Workshop on Patient Dose Assessment and Dose Management in Diagnostic and International Radiology under TC Regional Project RAS/9/055	18.12.2011 21.12.2011	Doha, Qatar	IAEA
27.	11/54	Mr. Gamini Galagamage	Station Officer (Training), Fire & Rescue Service Dept., Colombo 10.	Regional Training Course on Orphan Source Search (RAS/9/054)	07.11.2011 11.11.2011	Manila, Philippines	IAEA
28.	11/55	Mr. A.H. Dilip Kumar	Senior Medical Physicist, Teaching Hospital, Karapitiya, Galle.	IAEA/RCA Project Review Meeting (RAS/6/038)	06.12.2011 09.12.2011	Hanoi, Vietnam.	IAEA
29.	11/66	Prof. W. Abeyewickreme	Professor in Parasitology, Faculty of Medicine, University of Kelaniya.	FAO/IAEA Workshop on "Control of Aedes Mosquitoes, using SIT and Other Suppression Techniques" (RAS/0/059)	08.11.2011 11.11.2011	Vienna, Austria.	IAEA
30.	11/66	Mrs. R.D.J. Harishchandra	Emotology, Anti Malaria Campaign, 555/5, P.O. Box 1472, Elvitigala Mawatha, Colombo 05.	FAO/IAEA Workshop on "Control of Aedes Mosquitoes, using SIT and Other Suppression Techniques" (RAS/0/059)	08.11.2011 11.11.2011	Vienna, Austria.	IAEA
31.	11/67	Mr. G.K.K.A. de Silva	Deputy Director General (R&D), National Engineering Research Development Centre (NERD), Industrial Estate, Ekala, Ja-Ela.	Regional Workshop for Development of Management Skills on Innovation, Technology Transfer and Successful Technology Licensing (STL) for Research and Development (R&D) Institutions in Asia Region (RAS/0/059)	28.11.2011 01.12.2011	Manila, Philippines	IAEA
32.	11/69	Dr. A.S. Pallewatta	Consultant Radiologist, National Hospital of Sri Lanka, Colombo.	SAFRAD User Group Meeting (RAS/9/055)	14.11.2011 16.11.2011	Vienna, Austria.	IAEA
33.	11/71	Prof. Janitha Abeyewickreme	Professor, University of Kelaniya.	Technical Meeting on Regional and Interregional Networks for Education and Training in Nuclear Technology (ANENT)	28.11.2011 02.12.2011	Republic of Korea.	IAEA
34.	11/75	Brigadier SHFP Perera RSP	Brigadier, Sri Lanka Army	Regional Workshop on Nuclear Security Culture:	13.12.2011 15.12.2011	Yogyakarta, Indonesia	IAEA
35.	11/75	Brigadier SAR Samarasinghe RSP USP	Brigadier, Sri Lanka Army	Regional Workshop on Nuclear Security Culture:	13.12.2011 15.12.2011	Yogyakarta, Indonesia	IAEA

The IAEA Fellowships and Scientific Visits Awarded

January - December 2011

No	Fellowship No.	Name, Designation & Institute	Field of Fellowships / Scientific Visits	Country	Duration
01.	SRL/5/042	Ms. Lalani Wellawattage,	Molecular Biology Techniques in Immunodiagnostic.	Netherland	14.02.2011 26.03.2011
02.	SRL/5/042	Dr. Menaka Hapugoda	Molecular Biology Techniques in Immunodiagnostic.	Netherland	14.02.2011 25.02.2011
03.	SRL/6/031 SRL/11006	Dr. (Mrs.) Senani Williams, Consultant Hematologist, Faculty of Medicine, University of Kelaniya.	Fellowship Training in Molecular Biology Techniques and Immunodiagnostics	Netherland	11.09.2011 11.12.2011

IAEA Expert Assistance
January – December 2011

	Project No. & Title	Name and Nationality	Field of Specialty	Institution	Duration
01.	Project Planning on NPP - IAEA - TC Concept	Dr. Ahmed Irej Jalal Technical Officer, IAEA	Evaluating the Nuclear Energy Options and Advice on Conduct of Prefeasibility Study on NPP	Atomic Energy Authority	2011.03.20 2011.03.26
02.	SRL/5/042 Applications of Molecular Diagnostics to Zoonotic Diseases	Dr. Rudolf Albertus Hartskeerl (Netherland National), Department of Biomedical & Research, Royal Tropical Institute, Netherland	Diseases Outbreak in Human	Dr. Menaka Hapugoda, Senior Lecturer, Dept. of Molecular Biology, Faculty of Medicine, University of Kelaniya.	2011.04.28 2011.05.11 .
03.	SRL/8/019 Technical Support for the Establishment and Operation of a Multipurpose Gamma Irradiation Facility	Mr. Frezel Manfred, Germany		Mrs. S.S. Kulatunge, Head, Radiation Processing Section, Atomic Energy Authority	2011.08.01 2011.08.05
04.	SRL/6/031 Establishing Laboratory Facilities for Biomedical Dosimetry for Person Exposed to Radiation and Detection of Cancer Prone Individually.	Dr. Firouz Darroudi, State University of Leiden Leides University Medical Centre, Department of Toxicogenetic, Netherland	To conduct training programme for technical officers of the Faculty of Medicine	Dr. Hiranya Senani William, Faculty of Medicine, University of Kelaniya.	2011.05.22 2011.05.27
05.	RAS/8/109 Supporting Radiation Processing of Polymeric Materials for Agricultural Applications and Environmental Remediation"	Dr. Binh Doan (Vietnamese)	Assisting in developing Super Water Absorbent (SWA) using Radiation Processed Natural Polymers	Mrs. S.S. Kulatunge, Head, Radiation Processing Section, Atomic Energy Authority	2011.10.31 2011.11.04
06.	SRL8020 "Establishment and Operating a Pilot-Scale Electron Beam Facility to Treat Wastewater from Textile-Dyeing Factories"	Dr. Bumsoo HAN (Korean)	Feasibility Study for the establishment of a high energy electron beam service centre	Mrs. D.C.K.K. Dissanayake, Senior Scientific Officer, Life Sciences Division, Atomic Energy Authority	2011.11.14 2011.11.18

IAEA Expert Assistance
January – December 2011

	Project No. & Title	Name and Nationality	Field of Specialty	Institution	Duration
07.	PACT Programme of IAEA	1. Ms. Noor Khairullan, PACT Country Coordinator 2. Dr. Freddie Bray, Expert on Cancer Information BARC 3. Dr. Aileen Flavin, Expert in Radiation Oncology	Follow-up Mission Further to the IAEA/PACT Mission	Dr. Neelamani Paranagama, Director, National Cancer Control Programme	
08.	RAS/8/110 "Application of Advanced Industrial Radiography and Tomography in Industry and Civil Engineering"	Dr. Gursharan Singh (India)	to promote Non-Destructive Testing	Mr. T.M.R. Tennakoon, Head, NDT Section of the Atomic Energy Authority.	2011.12.19 2011.12.23
09.	SRL/8/019 "Technical Support for the Establishment and Operation of a Multi-Purpose Gamma Irradiation Facility"	Mr. Patel Virupakshagouda (Indian)	provided an AVS Viscometer through the Labasco GMBH	Mrs. S.S. Kulatunge, Head, Radiation Processing Section, Atomic Energy Authority	2011.11.28 2011.12.02
10.	RAS0056/05/01" Providing Legislative Assistance"	Mr. Abdelmadjid CHERF (Algerian)	to advise the national authorities of Sri Lanka on the legal framework for the control of nuclear applications and to review the draft nuclear law with the legal drafting team.	Chairman, Executive Director and other respective officials of Atomic Energy Authority	2011.08.20 2011.08.26
11.	RAS/9/053 "Strengthening Occupational Radiation Protection"	Dr. Lalitha Sivannair Arun Kumar, Head, Medical Physics and Radiation Protection Service & Radiation Protection Advisor, DGEA, Ministry of Health, P.O. Box 393, MUSCAT-113, Sultanate of Oman	Oman to coordinate and provide expert guidance on workplace monitoring and QA in personnel dosimetry with a focus on ORP	Mrs. A.K. Ratnayake, Senior Scientific Officer, General Scientific Division, Atomic Energy Authority.	2011.05.09 2011.05.13

FINANCIAL STATEMENTS

2011

ATOMIC ENERGY AUTHORITY

Principal Activities and Nature of Operation of the Atomic Energy Authority

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 center 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 socioeconomic 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.

Principle Activities of the AEA

1. Providing Scientific Services
2. Conducting Man power Development programs
3. Demonstrating the applications for nuclear technology to potential users
4. Under taking Research & Development in areas of national relevance
5. Ensuring that all uses of radiation and radioisotopes are carried out according to international standards.

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 2011 were:

Prof. W.Abeyewickreme (Chairman from January to June -2011)

(Head, Department of Parasitology, Faculty of Medicine, University of Kelaniya)

Dr. Ranjith .L.Wijewardane (Member & the Chairman from July to December 2011)
(Department of Physics, University of Peradeniya)
Prof. B.M.A.Oswin Perera (Board Member)
(Professor, Department of Farm Animal Production and Health, University of Peradeniya)
Eng. (Mr) M.G.A.Goonathilake (Member)
(Director-Technical, Ministry of Power & Energy)
Dr.N.J. Abeygunawardena (Board Member)
(Consultant Radiologist, Head, Nuclear Imaging Unit, Department of Radiology, National Hospital)
Prof. Janitha Abeywickrema Liyanage (Board Member)
Prof. of Chemistry, Department of Chemistry, University of Kelaniya
Mr. R. Uduwawala (Board Member)
Director, Dept. of National Budget, Ministry of Finance and Planning
During the period under review the Board held 11 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	Designation	Qualifications
Mr.J.M.A.C. Jayasinghe	Executive Director	B.Sc. (Colombo), M.Sc. (UNSW)
Mr. H.G.P. Karunaratne	Head, International and Human Resources Division	B.Ed. Colombo DBM (NIBM)
Mr.D.G.L.Wickramanayake	Head, Industrial Applications Division	B.Sc., M.Sc. (Colombo) M.Sc. (UK)
Mr. C. Kasige	Head, General Scientific Division	B.Sc. (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)
Ms. M.C.S.Seneviratne	Head, Life Science Division	B.Sc SriJayawardenepura), M.Sc. (Colombo)
Mr. Vajira Waduge	Head, Life Science Division	B.Sc (Peradeniya) M.Sc (Colombo)

Review by the Chairman

It is with great pleasure that I present the annual report of the Atomic Energy Authority (AEA) for the year 2011. As in the previous years, with the limited financial and human resources available, AEA continued to work towards its goals of providing benefits to the Sri Lankan community using nuclear technology.

Arrangements have been made to repeal existing Atomic Energy Authority Act No. 19 of 1969, and to repeal a new Act with provision to establish an Atomic Energy Regulatory Council. Cabinet approval was received on 22-06-2011. Draft Act was prepared and submitted to the Ministry of Power & Energy (MOPE) in January 2012

Cooperate Plan for the period 2011 -2015 was prepared & submitted to the Auditor General & Department of National Budget.

The activities of the AEA during the year 2011 are reported under the areas (a) Radiation Protection, (b) Programs of the International Atomic Energy Agency (IAEA), (c) Nuclear Instrumentation, (d) Non-destructive Testing, (e) Radiation Processing (f) Isotope Hydrology, (g) Nuclear Analytical Services, (h) Information Services and (i) Administration.

The AEA continued to provide radiation protection services to the state and private sector organizations to achieve safety norms by performing regular inspection of premises that use radiation sources and radioisotopes, and by monitoring radiation workers.

The AEA issued 133 licenses and registrations for use and possession of radioisotopes or irradiation apparatus (including X-ray equipment)

The number of authorizations issued to import and export radioactive material and X-ray equipment was 451.The number of food samples (imported as well as food samples which were to be exported) tested and for which certificates were issued were 7650.Repair of nuclear instruments/reinstallation of software/performance testing carried out by the AEA were 48 while the number of software and hardware maintenance / IT and network related services to AEA were 112.The number of radiation monitoring instruments calibrated which belong to AEA and external institutions were **5**9 while number of Personal Monitored for Occupational exposure to ionizing Radiation were 933.In the industrial sector 114 NDT inspection services were provided for the effective functioning of the machinery used enabling greater productivity. The number of NDT Training courses and workshops held were 9 with the participation of 249 personnel. Steps were taken to initiate activities in relation to establishment of a National Centre for NDT by 2013. The Foundation Laying ceremony for the National Centre for Non-Destructive Testing was held on 07th October 2011 with the participation of Hon. Minister of Economic Development Basil Rajapakse, Hon. Minister of Power and Energy Patali Champika Ranawaka and Public Relations Minister Mervyn Silva.

An experiment was carried out (jointly with CEB) at the Samanalawewa reservoir to find its leak which was a problem for several decades and ingress area was discovered.

Work connected with the Multi-purpose gamma irradiation facility continued.Manpower development is an essential component for the socio-economic development of Sri Lanka. With the assistance of the IAEA and the Japanese and Korean Governments, the AEA continued to develop technical capabilities of the scientists by providing expert services, fellowships and scientific visits, short term foreign training and seminars for local scientists. In-house human resource development was also promoted through courses conducted for administrative and support staff of AEA. The whole staff of AEA worked wholeheartedly to protect the Sri Lankan community from the Fukushima nuclear accident that occurred in Japan by establishing an emergency centre and hotline at AEA which was open round the clock also assisted them to carry out their responsibility to the public in the emergency. The banners to inform those arriving from Japan were placed at the Katunayake International Airport and they were asked to come to AEA directly for whole body radiation contamination check ups.

Financial Highlights

Net Income Earned from the external customer services provided in 2011 & 2010

Values in Rs Millions

	Income Source	**2011**	**2010**
01	License/Radiation Protection Services	5.6	4.3
02	Nuclear Instrumentation/Personal Monitoring	1.28	1.24
03	Non Destructive Testing Inspections/Training	6.12	6.82
04	Nuclear Analytical Services	31.7	21.53
	Total	**44.7**	**33.89**

Total income had been increased over 32% in 2011 when compare to the previous year.

I wish to thank the Members of the Board, Senior Management and the workforce of AEA for their co-operation, in carrying out the above programs successfully.

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Dr. R.L.Wijewardane

Chairman

ATOMIC ENERGY AUTHORITY

STATEMENT OF FINANCIAL PERFORMANCE

FOR THE YEAR ENDED 31ST DECEMBER -2011

	Notes	2011 Rs.	2010 Rs.
Revenue	**3**	54,413,369	53,117,915
Other Income	**4**	45,584,452	34,403,976
Total Income		99,997,821	87,521,892
Wages, Salaries and Employee Benefits	**5**	(39,951,324)	(35,111,781)
Administrative & Operational Cost	**6**	(24,698,813)	(26,115,589)
Other Recurrent Expenditure	**7**	(8,070,156)	(5,602,322)
Depreciation & Amortization Expenditure	**8**	(23,979,744)	(21,310,382)
Total Expenditure		(96,700,037)	(88,140,074)
Income Over Expenditure		**3,297,783**	**(618,182)**

ATOMIC ENERGY AUTHORITY
STATEMENT OF FINANCIAL POSITION
AS AT YEAR ENDED 31st DECEMBER -2011

	Notes	2011 Rs.		2010 Rs.	
ASSETS					
Non - Current Assets					
Property ,Plant & Equipment	**9**	306,090,001		190,138,046	
Other Long Term Assets	**10**	9,417,746		9,417,746	
Work In Progress	**11**	1,559,884		539,375	
Goods-In-Transit	**12**	----------		19,942,995	
Unusable Items	**13**	31,850		31,850	
R & D On-Going Projects	**14**	2,755,199	**319,854,681**	----------	**220,070,012**
Current Assets					
Inventories	**15**	4,527,649		2,681,776	
Receivables	**16**	12,408,133		11,111,597	
Prepayments	**17**	2,496,515		1,362,008	
Other Current Assets	**18**	1,197,039		42,103,311	
Cash and Cash equivalent	**19**	4,210,110	24,839,445	530,058	57,788,750
Total Assets			**24,839,445**		**57,788,750**
Current Liabilities					
Payable	**20**	(5,092,945)		(2,782,764)	
Non Current Liabilities					
Retirement Benefit Obligations	**21**	(15,434,480)		(14,722,022)	
Total Liabilities		(20,527,425)	**(20,527,425)**	(17,504,786)	**(17,504,786)**
Total Net Assets			**324,166,702**		**260,353,976**
EQUITY AND LIABILITIES					
Capital & Reserves					
Government Grant - Capital	**22**	296,442,665		232,685,068	
Accumulated Fund	**23**	88,268,268		90,694,719	
Revaluation Reserve	**24**	----------		790,000	
Deficit	**25**	(60,544,231)		(63,815,812)	
Total Net Assets/Equity		324,166,702	**324,166,702**	260,353,975	**260,353,975**

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

CASH FLOW STATEMENT
For the year ended 31-12-2011

Value in Rs.

	2011	2010
CASH FLOW FROM OPERATING ACTIVITIES		
Cash Received from Customers	51,490,000	44,568,000
Cash paid to Suppliers	(38,316,774)	(38,939,432)
Cash paid to employees	(38,988,000)	(33,685,000)
Cash paid to Authority members	(237,000)	(63,000)
Net Cash Flow from Operating Activities	**(26,051,774)**	**(28,119,432)**
CASH FLOW FROM INVESTING ACTIVITIES		
Acquisition of Plant, Machinery & Equipment	(62,220,226)	(78,571,000)
Sale of Vehicle	1,847,804	-------
Funds transfers to The Treasury	(1,847,803)	-------
	(62,220,225)	**(78,571,000)**
Net Cash Flow from Investing Activities		
CASH FLOW FROM FINANCIAL ACTIVITIES		
Receipt of Recurrent Grant	30,000,000	29,726,000
Receipt of Loan Capital & Interest	3,749,000	3,238,000
Payment of Loan	(2,873,000)	(4,858,000)
Receipt of Capital Grant	61,073,000	78,358,000
Net Cash Flow from Financial Activities	**91,949,000**	**106,464,000**
Net Increase/Decrease in Cash & Cash equivalent	**3,677,001**	**(226,432)**
Cash & Cash equivalent at the beginning of the year	**530,058**	**766,955**
Cash at Bank	530,056	756,490
Stamp Stock	2	10,465
Cash & Cash equivalent at the end of the year	**4,207,059**	**530,058**
Cash at Bank	4,207,000	530,056
Stamp Stock	2,792	2

ATOMIC ENERGY AUTHORITY
Statement of Changers in Net Assets
For the year ended 31st December 2011

Value in Rs.

	Capital Grant	Accumulated Fund	Revaluation Reserve	Accumulated Surp/Deficit	Total
Balance at 31- December 2009	**161,626,917**	**80,089,855**	**790,000**	**(63,112,832)**	**179,393,940**
Received for the Year	84,375,886	18,597,506			102,973,392
Adjustments Made -	(13,317,735)	(7,992,642)		(84,798.00)	(21,395,175)
Surplus/ Deficit for the Year				(618,182)	(618,182)
Balance at 31- December 2010	**232,685,068**	**90,694,719**	**790,000**	**(63,815,812)**	**260,353,975**
Adjus to the Opening Balance -	2,954,087		60,000	(97,208)	2,916,879
Re-stated Opening Balance	**235,639,155**	**90,694,719**	**850,000**	**(63,913,020)**	**263,270,854**
Received for the Year	75,584,618	6,772,184			82,356,802
Adjustments Made	(14,781,109)	(9,198,635)	(850,000)	71,006.06	(24,758,738)
Surplus/ Deficit for the Year				3,297,783	3,297,783
Balance at 31- December 2011	**296,442,665**	**88,268,268**	**-**	**(60,544,231)**	**324,166,702**

ATOMIC ENERGY AUTHORITY

Notes to the Accounts

1 SIGNIFICANT ACCOUNTING POLICIES

1.1 General

1.1.1 Basis of Preparation

The balance sheet as at 31.12.2011and the related income & expenditure account, changes in equity, cash flow, accounting policies and notes to the accounts in conformity with the Accounting Standards laid down by the Institute of Chartered Accountants of Sri Lanka. These financial statements are prepared on historical cost basis.

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 polices adopted are constant with these in the previous financial year.

1.1.4 Foreign Currency Transactions

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

1.1.5 Events Occurring after the Balance Sheet Date

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

1.1.6 Taxes

Authority used to collect VAT which was applicable for the period from their customers. Total allowable in put tax were deducted when the collected tax re pay to the Department of Inland Revenue until 2007. Policy on VAT applicable to the Authority was changed with effect from the year 2008. Accordingly, the allowable in put 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, Economic Service Charges 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 in the Balance sheet 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 Balance sheet 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 Balance sheet date.

1.2.1 Infrastructure, Plant & Equipment

The Property Plant and Equipment are recorded at cost/re valuation 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 it's 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 Annam 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 used on a straight line method as follows.

Buildings	Over 50 years	02 %
Boundary Wall	Over 10 years	10 %
Office Equipments, 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 %
Barbed wire fence	Over 05 Years	20%

Leas Hold Asset

The land held under long term lease is amortized over the period under lease. Atomic Energy Authority (AEA) had entered in to 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 Balance Sheet accordingly

1.2.3 Inventories -Basis of valuation

The cost of each category of inventory is determined on the following basis.

Stocks of consumables - At actual cost on first in first out method (FIFO)

1.2.3 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, and Atomic Energy Authority makes a general provision for doubtful debtors, which have been outstanding for over 5 Years. Provision for doubtful debtors were not made for the year 2011 since the Board of Directors decided take continuous actions in order to recover the maximum amount.

1.2.4 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

1. Defined Benefit Plan

The Retirement benefits to employees are provided according to the laid down statutory requirements, Authority's contribution for Employee's provident fund and Employees' trust fund is 12% and 3% respectively.

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

1.3.2 TRADE AND OTHER PAYABLE

Trade and other payable are stated at their cost

1.3.3 Capital Commitments and Contingent Liabilities

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

1.3.3 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.

Government Grant

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

1.5 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, 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 Research & Development

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

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 2011		2011 Rs.	2010 Rs.
3	**Revenue**		
	Government Grant- Recurrent	30,000,000.00	29,726,000
	Library Fine		6,929
	Rec. Grant for cler. Lab. Consumables	78,277.00	327,861
	Differed Revenue	23,979,743.79	21,310,382
	Consumable received as Donation	355,348.25	1,746,743
		54,413,369	**53,117,915**
4	**Other Income**		
	Food Testing	31,416,977.13	20,642,024
	Food Testing (HPGE Method)	131,192.40	203,132
	NDT Inspection Services	3,932,597.52	4,715,457
	Licensee Fees	3,700,478.45	3,983,682
	Radiation Protection Services	1,892,790.92	325,170
	Interest on Loan	302,672.29	280,769
	Nuclear Analytical	121,932.49	722,314
	General Scientific Services	1,284,723.54	1,236,772
	NDT Training Courses	2,193,595.01	2,105,840
	Amendment Charges	31,065.00	32,700
	Miscellaneous Income	576,426.88	120,073
	Scarp	0.00	36,043
		45,584,451.63	**34,403,976**
5	**Employee Benefits Cost**		
	Salaries	24,109,574	22,233,554
	Employees Provident Fund	2,869,057	2,668,027
	Employees Trust Fund	717,264	667,007
	Additional Allowances	1,801,544	602,195
	Interim Allowances	36,170	34,568
	Over Time& Holiday payments	1,073,609	907,770
	Gratuity- for the Year	1,180,793	1,154,650
	Encasement of Medical leave	1,435,039	1,424,269
	Incentive	550,788	533,250
	Cost of living	5,949,085	4,873,191
	Trainee Allowance	228,400	13,300
		39,951,324	**35,111,781**

Notes to the Accounts As at 31-December 2011		2011 Rs.	2010 Rs.
6	**Administrative & Operational Cost**		
	Office Traveling	232,004	229,384
	RCA Meeting	237,777	211,112
	IAEA General Conference	1,422,123	830,848
	Traveling for Authority Members	16,500	25,625.00
	Fuel & lubricants	872,458	618,126
	Office Consumables & Stationary	2,436,534	1,636,522
	Laboratory Consumables	1,593,402	3,018,170
	Clearing charges	68,982	42,963
	Laboratory Consumable Donation	974,550	3,642,965
	Uniforms	145,092	114,472
	Maintenance of Office Building	2,677,857	1,418,575
	Service & Repairs of Equipment	2,329,021	3,437,367
	Maintenance of Motor vehicle	861,417	1,052,136
	Electricity	3,265,215	3,366,879
	Water	236,412	257,852
	Telephone	753,799	567,664
	Telex , Fax & E-Mail	467,225	490,341
	Postage	199,108	198,297
	Security	2,908,308	2,889,393
	Insurance	1,516,341	1,115,485
	Transportation	968,910	595,053
	Rates	252,000	252,000
	Legal Expenses	263,678	104,257
	Ground Rent	102	103
		24,698,813	**26,115,589**
7	**Other Recurrent Expenditure**		
	Remuneration for Authority Memb.	197,000.00	65,000
	Training Programme ,Seminars	776,163	345,261
	Staff Local Training Programme	415,392	338,688
	Exhibition	913,860	340,638
	Subs. fees for Local and Foreign Membership	23,223	47,509
	Incidental Expenses for Scientist	131,152	74,500
	Entertainment	74,189	127,406
	Advertisement & publicity	802,815	387,125
	Subscript. for Newspapers	61,410	50,190
	Printing & Publications	264,112	46,033
	Bank Charges	27,524	20,118
	Welfare Services	226,050	163,114
	Audit Fees	150,000	139,816
	Miscellaneous Expenses	192,341	72,468
	Payment for N.D.T Training Course	545,112	290,144
	Payment for Radiation Protection	275,597	220,769
	Cont……..	**5,075,939.19**	**2,728,779**

Notes to the Accounts As at 31-December 2011			2011 Rs.	2010 Rs.
		Cont……	5,075,939	2728779
		Payment for Inspection	442,768	567,320
		Payment for Food Testing	457,759	61,150
		Payment for General Scientific Division	52,221	4,300
		Expenses for CEB Consultant		22,994
		Research & Development Projects	168,758	252,552
		Agriculture project	367,361	268,132
		Stamp Duty	9,575	8,850
		Nation Building Tax	690,362	868,203
		Debit Tax	52,975	103,371
		Economic Service Charges	87,422	264,680
		Income Tax	17,684	16,556
		Social Responsibility Levy	411	
		Surcharge	11,649	
		Corporate Plan	600,000	
		Doubtful Debtors		165,724
		Loss on disposal of unusable assets	35,272	248,802
		Lab consumables donated to schools/ITI	-	20,909
			8,070,156	**5,602,322**
8	8	**Depreciation /Amortization of Asset**		
		Amortization (Lease Rent)	98,485	98,485
		Depreciation on Acquisition of Assets	14,682,624	13,219,255
		Depreciation on IAEA Donations	9,198,635	7,992,642
			23,979,744	**21,310,382**

Property Plant & Equipment – Note No 9

Tangible Assets Note

Lease Hold Assets Note- 9.1 Cost	Life of the Asset year	Balance As At 1/1/2011	Adjustment Made	Re-stated Opening Bal.	Additions/ Transfers in	Disp/Tran out Adjust	Balance As At 31-12-2011
Land	99	8,338,382				(98,485)	8,239,897
		8,338,382			**-**	**(98,485)**	**8,239,897**
Owned Assets Note- 9.2							
NDTC-Land					90,884,994		90,884,994
Office Building	50	78,562,025		78,562,025	220,565	(1,869,365)	76,913,225
Boundary Wall	10	287,653		287,653		(287,652)	1
Scientific Equipment	10	63,575,048	3,461,771	67,036,819	19,389,372	(6,989,319)	79,436,872
Scientific Equipment donation	10	58,003,314		58,003,314	7,267,654	(9,236,771)	56,034,197
Office Equipt/ Furn & Fitti.	10	8,482,558		8,482,558	842,198	(1,093,753)	8,231,002
Other Equipment	10	1,892,139	(1,400,206)	491,933		(39,706)	452,226
Motor Vehicle	4	2,430,790		2,430,790	12,900,000	(2,030,201)	13,300,589
Radiation facility	10	867,552		867,552			867,552
Library Books	10	882,463		882,463	60,705	(89,880)	853,288
Sports Equipment	10	115		115		(115)	
Computer items	3	2,561,952		2,561,952	1,738,555	(1,213,074)	3,087,433
Electronic Items	4	1,615,248		1,615,248	1,532,986	(739,713)	2,408,521
Security Hut & fence-	10	606,411		606,411		(70,000)	536,411
Access Bridge	10	2,404,522		2,404,522		(286,439)	2,118,083
NDT Fence	5			-	490,800	(32,810)	457,990
NDT Boundary Wall	10			-	2,583,023	(82,838)	2,500,185
TOTAL ASSETS VALUE Rs.		**222,171,790**	**2,061,565**	**224,233,355**	**137,910,853**	**(24,061,635)**	**338,082,571**

DEPRICIATION Amortization/Depreciation	%	As At 40,544	Adjustment Made	Re-stated Opening Bal.	Additions/ Transfers in	Disposals/Transfers out out adjustments	As At 31-12-2011
Land		-	-			-	-
NDTC-Land							
Office Building	2				1,869,365	(1,869,365)	
Boundary Wall	10				287,652	(287,652)	
Scientific Equipment	10	32,246,833	415,861	32,662,694	6,922,773	(6,986,761)	32,598,706
Scientific Equipment donation	10	4,345,195		4,345,195	9,198,635	(9,198,635)	4,345,195
Office Equip/ Furn & Fitti.	10	1,101,040		1,101,040	1,055,384	(1,093,745)	1,062,678
Other Equipment	10	894,068	(415,861)	478,207	2,509	(39,702)	441,014
Motor Vehicle	25			-	2,030,199	(2,030,199)	
Radiation facility	10	867,550		867,550			867,550
Library Books	10	307,249		307,249	89,880	(89,880)	307,249
Sports Equipment	10	114		114		(114)	
Computer items	33	505,870		505,870	1,214	(1,214)	505,870
Electronic Items	25	104,204		104,204	739,713	(739,713)	104,204
Security Hut	10				70,000	(70,000)	
Access Bridge	10				286,439	(286,439)	
NDT Fence	20				32,810	(32,810)	
NDT Boundary Wall	10				82,838	(82,838)	
TOTAL DEPRICIATION Rs.		**40,372,123**	**-**	**40,372,123**	**22,669,409**	**(22,809,065)**	**40,232,466**
NET BOOK VALUES Rs.	**Note**	**2,011**				**2,010**	
Property Plant & Equip–	**9.1**	297,850,104			**9**	181,799,667	
Lease Hold Properties	**9.2**	8,239,897			**9**	8,338,382	
		306,090,001				**190,138,049**	

Notes to the Accounts As at 31-December 2011			2011 Rs.	2010 Rs.
9		**Non Current Assets**		
	9.1	Property Plant & Equipment	297,850,104	181,799,664
	9.2	Leas Hold Assets	8,239,897	8,338,382
			306,090,001	**190,138,046**
10		**Other Long Term Assets**		
		Scientific Equipment received for MGIF project	9,417,746	9,417,746
			9,417,746	**9,417,746**
11		**Work-In-Progress**		
		Water Proofing work	515,283	------
		NDT Center	655,226	150,000
		Office Automation Software	389,375	389,375
			1,559,884	**539,375**
12		**Goods -In- Transit**		-
		TLD Reader	------	19,942,995
				19,942,995
13		**Unusable Items**		
		Unusable Items	31,850	31,850
			31,850	**31,850**
14		**Research & Development On Going Projects**		-
		Water Resource Management	1,736,117	------
		Pre Feasibility Study on Nuclear Power Generation	524,776	------
		Radiative Monitoring Programme	143,824	------
		Y N S S	224,080	------
		C K D	47,295	------
		Electro Beam Service Facility in Sri Lanka	33,182	------
		Developing National Capability to Respond radiological Emergencies	45,926	------
			2,755,199	------
		Current Assets		
15		**Inventories**		
		Chemical Stock	485,370	277,135
		Office & Laboratory Consumable & Vehicle Spare Stock	1,375,530	1,542,450
		Laboratory Consumable stocks Identified as obsolete	397,758	433,004
		IAEA Closing stocks (Donation))	2,268,991	429,188
			4,527,649	**2,681,777**

Notes to the Accounts As at 31-December 2011		2011 Rs.	2010 Rs.
16	**Receivables**	**12,408,133**	**11,111,598**
	Trade Receivables		
16.1	**Debtors**		
	Trade Debtors -Related to Current Year	3,620,965	1,473,369
	Trade Debtors -Related to Previous Years	1,411,294	1,291,384
16.2	Doubtful Debtors	(158,794)	(165,724)
	Trade Debtors Net Amount as at 31-12-2009	**4,873,464**	**2,599,029**
	Staff & Non Trade Receivables		
16.3	Staff Debtors	116,650	62,541
	Other debtors	75,100	601,980
	Ministry of Science & Technology (MGI Project)	7,664	8,944
		199,414	**673,465**
16.4	**Advances & Loans**		
	Motor Cycle Loan	279,166.50	
	Special Distress Loan	26,875	23,542
	Cycle Loan	44,557	11,528
	Festival Advance	58,200	61,200
	Distress Loan	6,587,733	7,414,110
	Advance to Employee	514	514
		6,997,045	**7,510,894**
16.5	**Refundable Deposits (Receivable)**	338,210	328,210
17	**Prepayments**		
	DPJ Holdings	------	13,700
	Access International	12,623	------
	Sri Lanka Insurance Corporation	2,207,418	1,101,184
	Metropolitan Communication Ltd	9,849	------
	Motor Traffic Commissioner	8,977	8,821
	Hideki International	677	677
	Ceylinco Insurance	------	414
	Metropolitan Office (Pvt) Ltd	46,667	44,166
	S.L.A.B	49,790	60,558
	Brown & Co.	1,667	------
	Chairman	20,000	20,000
	Executive Director	18,000	18,000
	National Insurance Trust Fund	69,849	19,987
	National Insurance Corporation	------	59,250
	Cool Tech Engineering	------	5,250
	K. Kulathissa	------	10,000
	Soar Technology	51,000	------
		2,496,515	**1,362,008**

Notes to the Accounts As at 31-December 2011			2011 Rs.	2010 Rs.
18		**Other Current Assets**	**1,197,039**	**42,103,311**
	18.1	With holding Tax Receivable	29,876	36,152
		Income Tax Advance	17,684	------
	18.2	Purchasing Advance	566,767	67,159
	18.3	I.A.E.A Receivable	582,712	------
	18.4	Advance payment for Building Maintenance	------	2,000,000
		Advance payment to SLLRCD for NDT Center	------	40,000,000
19		**Cash at Bank**		
		Ac no:071-1-001-1-3320739	4,102,318	425,056
		Ac no: 0441-001-9-0210873	105,000	105,000
		Stamp Stock	2,792	2
			4,210,110	**530,058**
20		**Trade Payable**	**5,092,945**	**2,782,764**
	20.1	Creditors & Accruals Opening Balance	2,176,933	1,881,422
		Prior Year Adjustment	----------	1,008,000
		Re-stated Opening Balance	2,176,933	2,889,422
		Adjustment to current year		(1,008,000)
		Settlement during the year	(1,572,497)	
		For the Year balance		295,511
		Provision for the year	3,894,979	
			4,499,415	**2,176,933**
	20.2	Advance Income for License fees	116,383	194,151
		Advance Income for Radiation Protection	13,608	4,428
		Advance Income for Food Testing	540	540
		Over Payment	39,380	
	20.3	Sundry Creditors	19,838	19,838
	20.3	Payable - Imperial Teas (Pvt) Ltd	392	
	20.4	VAT Payable	131,789	297,274
	20.5	Advance payment received for Rent – Polipto Co.	180,000	
	20.6	Refundable deposit Payable	91,600	89,600
21		**Retirement Benefit Obligations**		
		Balance at the beginning of the year	14,722,022	13,567,372
		Cash Paid	(453,812)	
		Add : Provision for the year	1,166,270	1,154,650
			15,434,480	**14,722,022**

Notes to the Accounts

As at 31-December 2011		**Rs.**	**Rs.**
	Capital & Reserves		
22	**Capital Grant**		
	At the beginning of the year	232,685,068	162,634,917
	Prier Year Adjustment for Grant Received	2,954,087	(1,008,000)
	Adjust.made as per the Change in Depreciation Rate		-
	Opening Balance after the SLAS Adjustments	**235,639,155**	**161,626,917**
	Capital Grant Received for the year	75,584,618	78,358,000
	Grant Received for Clearing of Donation	(14,781,109)	6,017,886
	Application of SLAS 24 relevant to current year Adjustment for Grant Received		(13,317,735)
		296,442,665	**232,685,068**
23	**Accumulated Fund**		
	Balance at the beginning of the year	90,694,719	80,089,855
	Adjustments Made as per the SLAS 24 prior to 2010		
	Opening Balance after the SLAS Adjustments	**90,694,719**	**80,089,855**
	Application of SLAS 24 relevant to 2010	(9,198,635)	(7,992,642)
	Donations Received for the Year	6,772,184	18,597,506
		88,268,268	**90,694,719**
24	**Revaluation Reserve**		
	Balance at the beginning of the year	------	790,000
	Adjustment to the opening balance	------	------
	Restated Balance	------	**790,000**
25	**Deficit**		
	Balance at the beginning of the year	-63,815,812	(63,112,832)
	Prior Year adjustments before 2011 (SLAS 24 & Other)	-97,208	
	Re stated Opening balance	**-63,913,020**	**(63,112,832)**
	Prior Year adjustments before 2008 (SLAS 24 & Other)		
	Adjustments A/C	71,006	(84,798)
	Surplus/Deficit for the year	3,297,783	(618,182)
		-60,544,231	**(63,815,812)**

IAEA Donations on the Technical Cooperation

The AEA is functioning as the focal point in Sri Lankan for the coordination and implementation of the International Atomic Energy Agency (IAEA) technical cooperation programmes throughout 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 2011 for AEA technical cooperation programmes.

	Pro. No.	**Project Description**	**Allocation in USD ($)**	**Allocation in SLRS approximate**	**Value of Equipment & Consumables Received in SLRS**
01	SLR/9/009	Development of National Capabilities of Radiological Emergencies	277,248	27,724,800	Pending
03	SLR/8019	Technical Support for the Establishment of a Multi – Purpose Gamma Irradiation Facility	82,395	8,239,500	6772184
05	-------	Interregional Projects/Research Projects	10,000	1,000,000	286,698
		Total	**369,643**	**36,964,300**	**7,058,882**

In addition to above, The AEA had conducted several research projects using IAEA assistance and trained AEA employees as well as officers of other institutes in various fields. Further AEA officials had participated in several meetings conducted in several countries.

Sri Lankan Government made the following contributions as the national progremme cost on behalf of receiving the above assistance from IAEA

.

1.Regular Budget contribution is SLRS. 5.2 million.

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

Change of AEA Vehicle fleet

Two old vehicles were sold and replaced with new vehicles under the financial leasing method. Market value of the similar type of vehicles were considered for the value of these vehicles.

Accounting & Inventory Records on Equipments Including IAEA Donations

Many equipment received under various technical cooperation projects and given to government institutions through AEA had been recorded as AEA assets in the books and accounts of the AEA. This had been happened during the last couple years.

The Board of management looked in to this matter during the year 2009 and appointed a subcommittee to update the inventories and transfer the ownership to the present user institutions. A consultant also was appointed to help this committee.

The subcommittee had identified the actual equipment belonging to AEA and had taken action to officially handover the equipment where they are already installed outside institutions.

Board has decided to obtain the confirmation from all the institution by sending another reminder on the acceptance of the items and to hand over the same officially to present users. Two institutions had replied for the letters. Necessary adjustments in the accounts were made for those who had confirmed the existence of the equipment.

All the repairable equipment identified during this survey have been handed over to the manufactures through the local agents to submit the report on cost of repairs. 4 numbers of equipment were able to repair during the year 2011 and one is beyond the repairs.

Related Party Disclosures

There is no related party or related party transaction to be disclosed in the Financial Statements.

Other Long Term Assets

Scientific Equipment received as donation from IAEA under Multi Purpose Gamma Irradiation facility Project (MGIF) worth Rs 9,417,746/- is shown under other long term assets in the Balance Sheet.

Outsourcing of AEA Properties

The Board of Directors of the AEA has decided to rent idling space (400sft.) for the use by the Polipto Lanka (PVT) Ltd for a period of One Year .Polipto Lanka (PVT) Ltd. Is a Company gazette under the Ministry of Power & Energy.

Equipment Received under Government Extra Budgetary Contribution

Two equipment namely TLD Reader and Liquid Water Analyzer were received under the above method through the IAEA. Rs.27.6 million was remitted as the invoice values of these two items. The in house training as mentioned in the invoice had not been arranged up to now. The amount belonging to above item Rs.582,711.00 is shown in the Balance Sheet under receivables.

AEA has to pay 3% of the value of above transaction to the IAEA after completing the entire job.

Corporate Plan 2011 – 2015

Preparation of the Corporate Plan 2011 – 2015 had been entrusted to outside consultant firm with the approval of the Board of Directors and concurrence of the Hon'ble Minister of Power & Energy at the Progress Review Meeting held in the Ministry of Power & Energy.

The Consultants conducted a Brain Storming session on strategic planning and organized out bound programme in order to collect basic inputs for this task. Board members and senior staff attended to those sessions.

Special Board Meeting convened on 24.Feb.2011 on the recommendation of the Hon'ble Minister for the members regarding the preparation of the Corporate Plan 2011 – 2015.

A presentation and official handing over session was held at the Ministry of Power & Energy on 09. September 2011 and it was presented to Hon'ble Minister of Power & Energy at this session. Members of the Board and Divisional Heads of the AEA participated to this session.

The consultancy fee agreed to pay as per the MOU in this regard is Rs.600,000/= (ex. Taxes).

The above payment was directly charged as 2011 expenditure. No treasury funds were utilized for this matter.

Financial Commitments (Capital)

End of the year cash balance representing the following payable amounts for purchase orders issued on scientific equipment.

Date	PO No.	Item/Description	Amount Rs.
16.12.2011	2024	Digital Film Densitometer	599,200.00
05.12.2011	2002	Spot Focused UV Lamp (Battery Operated)	351,950.00
19.10.2011	1958	Certified Denstep X ray film step tablets	57,327.00
19.10.2011	1960	Film Viewer	305,984.00
19.10.2011	1961	Digital Radiation Survey Meter	270,368.00
03.11.2011	1972	Lead Letter Box	58,352.00
14.12.2011	2015	Ultra-Pure Water Purification Unit	565,000.00
16.12.2011	2025	Accessories for Phasec 2d Eddy Current Instrument	1,139,040.00
		Total	**3,347,221.00**

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கணக்காய்வாளர் தலைமை அதிபதி திணைக்களம்
AUDITOR GENERAL'S DEPARTMENT

මගේ අංකය
எனது இல
My No LP/D/AEA/FA/11

ඔබේ අංකය
உமது இல
Your No.

දිනය
திகதி
Date 06 December 2012

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 2011 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 2011 comprising the balance sheet as at 31 December 2011 and the income statement, 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 was issued to the Chairman of the Authority on 16 July 2012.

1.2 Responsibility of the Management for the Financial Statements

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

අංක 306/72 පොල්දූව පාර,
බත්තරමුල්ල , ශ්‍රී ලංකාව
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Telephone. 2887220
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Fax No. 2887223
ඉලෙක්ට්‍රොනික තැපෑල්
e- மெயில்
E-mail. oaggov@sltnet.lk

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. 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 judgments, including the assessment of the risk of material misstatements 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 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 2011 and its financial performance and cash flows for the year then ended in accordance with Sri Lanka Accounting Standards .

2.2 Comments on Financial Statements

2.2.1 Sri Lanka Accounting Standards (SLAS)

Following observations are made.

(a) Gratuity Formula Method or Actuarial Method should be used in calculating provision for gratuity in terms of SLAS 16. However the Authority had made provision for gratuvity in terms of Payment of Gratuity Act No 12 of 1983.

(b) The Authority had not revalued the assets to ensure that the carrying amount do not differ materially from the fair value which would be determined at the balance sheet date, as stipulated in SLAS 18 – Property, Plant and Equipment. Further, fully depreciated assets of which the historical cost was Rs.87.82 million had continued to be used by the Authority without taking action to revalue the relevant assets.

(c) The Authority had not made provision for bad and doubtful debts for the year under review in terms of SLAS 36-Provisions, Contingent liabilities and Contingent Assets.

2.2.2 Accounting Deficiencies

Following accounting deficiencies were observed in audit.

(a) The Authority is functioning as the Sri Lankan coordinator for implementing the International Atomic Energy Agency (IAEA) Projects throughout the Country. Accordingly, the donation of assets valued at Rs.9, 417,737 by the IAEA to the Multi-purpose Gamma Irradiation Facility (MGIF) Project had been made through the

Authority. However, the Authority had erroneously accounted those donated items as assets of the Authority and included under assets in the financial statements for the year 2011 although, the ownership of the said assets had been taken over by the relevant implementing agencies of the project.

(b) It was observed that the balances of the assets of the Authority as per Register of Fixed Assets differed from the closing balances of the ledger accounts and the total difference amounted to Rs.1, 110,049 as at the balance sheet date. Details are shown below.

Type of Asset	Balance as per Ledger Accounts	Balance as per Fixed Assets Registers	Difference
	Rs.	Rs.	Rs.
Scientific Equipment	79,436,872	80,264,736	827,864
Office Equipment/Furniture and Fittings	8,231,002	7,951,754	279,248
Other Equipment	452,226	449,289	2,937
Total			**1,110,049**

(c) A difference of Rs.1,864,172 was observed between the General Ledger and the respective balances of 15 items in the financial statements.

(d) It was observed that Thermo Luminance Decimeter (TLD) cards and holders valued at Rs.2, 268,990 purchased from a foreign company had been shown as IAEA closing stocks (Donations) in the Financial Statements instead of being capitalized.

(e) According to the Cabinet decision taken to purchase scientific equipment through IAEA, the Authority should pay US$ 7, 240.74 to the IAEA as administration cost and programme assistance. It was observed that the Authority had not shown this amount as payable to the IAEA in the Financial Statements for the year under review.

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(f) A sum of Rs.655, 226 had been shown in the financial statements as work _in_ progress of Non Destructing Testing (NDT) Center. According to the test check carried out revealed that out of this amount a sum of Rs.464, 500 represented sundry expenses.

(g) Obsolete laboratory consumable stocks valued at Rs.397, 758 had been shown in the financial statements for the year under review without making any provision.

(h) Rent income amounting to Rs.480, 000 had not been taken into consideration in calculating Income Tax for the year 2010/2011.

(i) A sum of Rs. 389, 375 had continuously been shown under work in progress with regard to implementation of office automation software, which was completed and not being capitalized.

2.2.3 Accounts Receivable

Debtor balances amounting to Rs.1, 411,292 had remained unsettled for more than one year and balances amounting to Rs.519, 225 had remained unsettled for more than five years. It was observed that 81% of debtors were more than five years, which represented for government institutions.

2.2.4 Lack of Evidence for Audit

No documentary evidence were made available regarding the existence of Fixed Assets amounting to Rs 867,552 included in the financial statements as Radiation Facility.

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

Instances of non-compliance observed in audit are given below.

Reference to Laws, Rules, Regulations and Management Decisions	Non –compliance
Department of Public Enterprises Circular No PED/12 of 2 June 2003	
(1) Section 5.2.1	The budget of the Authority should include Budgeted Income and Expenditure Statement, Budgeted Balance Sheet and Cash Flow Statement. However, the Authority had not submitted such documents along with the budget for the year under review.
(11) Section 6.5.1	The Draft Annual Report of the Authority had not been rendered to the Auditor General within sixty days after closure of the financial year, with copies to the line Ministry, Department of Public Enterprises of the General Treasury.
(111) Section 8.7	The Authority had not deducted and remitted PAYE tax to the Department of Inland Revenue from nine employees for the period from July 2009 to March 2011.

3. Financial and Operating Review

3.1. Financial Results

According to the financial statements presented, the operations of the Authority for the year under review had resulted in a net surplus of Rs.3, 297,783 as against the net deficit

of Rs.618, 182 for the preceding year thus indicating an improvement of Rs.3, 915,965 in the financial results. The reason attributed for this improvement was the significant increase of revenue from food testing by Rs.10.77 million for the year under review.

3.2 Performance

The following observations are made.

(a) The Advisory Committee appointed by the Hon. Minister of Power and Energy, as per Section 31 of the Act of the Authority had not met since 1999. Further, the new Advisory Committee nominated by the Authority during the year 2006, had not been appointed by the Hon. Minister even up to end of December 2011.

(b) The cost of the Multi-purpose Gamma Irradiation Facility (MGIF) project had been estimated at Rs.302.20 million in the year 2006 and the estimate had to be revised due to the high price escalation. The revised budget for Rs.609.83 million had been approved by the Cabinet Appointed Procurement Committee. The Project had been delayed as there was a dispute between the Authority and the Board of Investment regarding the land allocated for the Project. Due to the above reason the Project had not obtained the allocation for the MGIF project as agreed by the International Atomic Energy Authority (IAEA) for manpower training. Details are as follows.

Human Resource Components	2007 US$	2008 US$	2009 US $	2010 US $	2011 US $
Experts	68,640	45,045	207,715	245,115	45,000
Fellowships	51,300	29,000			50,000
Scientific Visits	29,280	25,000			25,000
Total	**149,220**	**99,045**	**207,715**	**245,115**	**120,000**

3.3 Management Inefficiencies

Following observations are made.

(a) The Authority had awarded a contract to the Government Factory at a cost of Rs.1,154,234 (inclusive VAT) for the sealing of windows to safe guard from rain water using rubber beading and silicon gum in the main building in 2010. Even though the task had not been completed properly, the Authority had paid a sum of Rs.515, 283 without examining the quality of the service provided by the contractor and the balance payment had been shown in the financial statements as work _in_ progress.

(b) The Authority had entered into an agreement with a company through IAEA for purchase of some scientific equipment. According to the agreement, the company should provide a training regarding this equipment. It was observed that the Authority had paid a sum of Rs.582, 713 as training expenses to the above company without receiving the above facility, which was already included in the purchase price.

(c) Obtaining Licenses relating to the Regulations on Ionization Radiation Protection

In terms of provisions in paragraph 3 of Chapter I of the Government Gazette Notification No. 1142/30 of 28 July 2000 relating to Regulations on Ionizing Radiation Protection, no person shall be engaged in any practice specified in Sections 18, 19 and 20 of Atomic Energy Authority Act No.19 of 1969 who are involving exposure to, or the likelihood of exposure to ionizing radiation or to radio active substances or irradiating apparatus, without the authority issued by the Atomic Energy Authority in such practice. Such authorization process would be in the nature of registration and / or the issue of the license and that is subjected to annual renewal.

Nevertheless, it was observed that, contrary to the above provisions of the Gazette Notification, 89 institutions which use radiation had been used radiation equipment without obtaining a license or renewal of such licenses for a number of years. The Authority had not taken any course of action whatsoever up to 31 December 2011 for taking legal action against such institutions. Details are as follows.

Year	No. of Registered Institutions	No. of Licenses Issued	Not obtained License or Renewal of license
2008	308	155	101
2009	319	188	123
2010	369	274	95
2011	507	418	89

3.4 Revision of the Atomic Energy Authority Act No 19 of 1969

The International Atomic Energy Authority (IAEA) by its letter No. AUT/MULT/IAEA/22 of 01 January 2006 had informed the Authority that the present Act is adequate at the time it was promulgated and in view of the current international safety standards and increased application of radiation technologies in health/agriculture and other areas, the above Act needs to be revised. Further, a revision of the present Act is needed since it had not been demarcated the regulatory and promotional functions of the Authority in order to avoid any conflict of interest. Even though a Committee had been appointed in 2006 to review the weaknesses of the present Act and to prepare a new draft Act, that task had not been succeeded even up to 31 December 2011.

3.5 Uneconomic Transactions

Following observations are made.

a) It was observed that a balance of Rs.105, 000 had remained in idle in a bank account of the Authority for a long period.

b) According to the Board Paper dated 12 August 2012, the Authority had approved to carry out a study of verifying the ingress area of the leak of the Samanala wewa Reservoir using Authority's funds and get reimbursement from the Ceylon Electricity Board (CEB). It was observed that a sum of Rs.1, 736,117 had been spent by using

Authority's funds for this project and had been shown in the financial statements as Research and Development Projects without obtaining reimbursement from CEB.

c) It was observed that a sum of Rs. 4,102,318 had remained in a bank account of the Authority at 31 December 2011 without being used effectively.

3.6 Accountability and Good Governance

a) The Authority had entered into a memorandum of understanding with a private company to prepare a Corporate Plan for the period 2011-2015. According to the Memorandum of Understanding (MOU), the Corporate Plan should be submitted to the Authority within ninety days from the date of the MOU signed. However it had not been submitted up to the date of audit inspection on 06 June 2012. Further payment of Rs.600, 000 had been made by the Authority for the preparation of Corporate Plan without receiving the Corporate Plan.

b) Internal Audit

The Internal Auditor is responsible to review systems and procedures, to ensure the smooth operations of the Authority and the Internal Audit Programme is being prepared annually for that purpose. However it was observed in audit that most of the areas in the Annual Audit Programme of the year under review had not been covered and it was further observed that Internal Audit Division of the Authority consisted of only one officer and additional works also had been assigned to that officer.

3.7 Budgetary Control

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

4. **Systems and Controls**

Deficiencies in systems and controls observed during the cause of audit for the year under review were brought to the notice of the Chairman of the Authority by my detailed report issued in terms of the section 13(7)(a) of the Finance Act. Special attention is needed in respect of the following areas of control.

a) Tax liability
b) Property Plant and Equipment
c) Accounts Receivables
d) Inventory Items
e) Human Resource Management
f) Corporate Plan
g) Budget
h) Compliance with Laws , Rules , Regulations etc.

H.A.S.Samaraweera
Auditor General

Remedial Actions for the Report of the Auditor General on the Financial Statements of the Atomic Energy Authority for the year ended 31 December 2011 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 Accounting Standards (SLAS)

(a) Provision for Gratuity has been made in terms of Gratuity Act No. 12 of 1983. Necessary adjustments in the accounts will be made in 2012 if any over /under provision is arisen.

(b) Identification of fully depreciated assets continued to be used have been completed. The first schedule will be sent for revaluation in 2013.

(c) Provision for bad and doubtful debts will be made in 2012 Financial Statements.

2.2.2 Accounting Deficiencies

(a) At the meeting held in 25th March 2011 under the chairmanship of the Secretary to the Treasury, decision has been taken to hand over Multipurpose Gamma Irradiator Facility/project to the Atomic Energy Authority upon the completion of construction work and installation of machinery. Department of Management Services has approved necessary cadre provisions for this project under AEA.

(b) Action will be taken to write off the unidentified shortages and excess assets taken in to ledger.

(c) This error had been occurred as the Book Keeper had entered some journal entries after preparation the financial statements. These entries were removed and will be considered for 2012 accounts.

(d) As a practice AEA accounted TLD cards & holders as consumables considering the nature & the life time of the item.

(e) Authority is willing to negotiate with the IAEA to wave off this amount.

(f) The amount of Rs.464,500 represent the initial expenses mainly incurred for the opening ceremony and laying foundation stone of the NCNDT project. These expenses have been considered as project expenses with the approval of the Board.

(g) Provisions will be made for obsolete stocks in 2012.

(h) Rental income was considered for income tax calculations for tax year 2011/2012.

(i) Amount spent on completed office automation software package will be transferred to asset account in the year 2012.

2.2.3 Accounts Receivable

An action will be taken to write off the bad debts following the Authority's policy.

2.2.4 Lack of Evidence for Audit

List of expenses have been identified relevant to this balance and handed over to the Internal Auditor in order to rectify this as per the instructions of the Audit Committee.

2.2.5 Non Compliance with Laws, Rules, Regulations and Management Decisions

Budgeted income and expenditure statements will be prepared and submitted to the relevant authorities in accordance with PED Circular No 12 of 2nd June 2003 from the year 2012.

Remittance of PAYE deductions from nine employees were stopped as per the instructions received from the Department of Inland Revenue.

3.1 Accepted

3.2 Performance

a. The Authority is functioning under the Ministry of Technology, Research and Atomic Energy from January 2013 and it has made a request to Hon' ble Minister to appoint a new Advisory Committee for the Authority.

b. Due to many reasons MGIF Project implementation was initially delayed and accordingly obtaining IAEA Technical support for the project was postponed. However, the same project was excluded by the IAEA and during extension MGIF received the approved equipment and HR components of the IAEA Project.

The total technical assistance received up to 28.01.2013 was USD 306106.31 including USD 23442.04 worth of human resources development component.

3.3 Management Inefficiencies

(a) This amount is relevant to balance 50% of the cost of sealing windows for water leaking by the Government factory (GF). As per the condition of the contract this balance had to be settled after completing the job. During the inspection for certification of the work done, AEA had observed the water coming inside the building has not stopped. This has been informed to the GF. Final payment due to GF has been retained until the said defects are repaired.

(b) Training component was also included in the Performa invoice submitted by the supplier of the TLD Reader. But the total payment was made not to the supplier but to the IAEA. International Division of the AEA is in the process of obtaining relevant training to the technical officer of the General Scientific Division**.**

(c) Obtaining Licenses relating to the Regulations on Ionizing Radiation Protection

In the Audit report ,total Number of registered facility for 2011 has been indicated as 507,but actual registered facility for 2011 was 489 as some facilities have been deleted as there had been repetitions.

Details of the facilities licensed for 2011 and 2012 are summarized below for information.

Description	Till December 2011	Till December 2012
No.of facilities having license	312	339
No.of facilities not obtained licenses	19	35
Closed facilities	17	48
Temporary closed facilities	12	9
New facilities to be licensed	9	19
No. of facilities license not issued	120	39
Total	489	489

We have not issued licenses for 120 institutions for 2011 as these institutes have not Complied with our requirements.

However , most of the institutions have now obtained licenses or closed. Therefore, number. of institutions not issued licenses have reduced to 39.

The Atomic Energy Authority has taken legal action for Seetha Chanelling Centre, Pilimathalawa for using the machine without a license even after giving instructions to close the facility. Fine was imposed on the institute by the Magistrate's court of Kandy.

All the facilities that were not obtained licenses were requested to renew licenses and inspections are carried out to find out whether the facility is used without obtaining a licenses. Necessary actions will be taken against those facilities which do not comply with our regulations.

3.4 Revision of the Atomic Energy Authority Act No. 19 of 1969

Steps have been taken to draft a new Act for the Atomic Energy Authority demarcating promotional functions and effectively independent regulatory functions. Preparation of a draft Act was accelerated since September 2010. AEA was able to prepare a final draft of the Act with the assistance of an IAEA Expert and local technical personal. This activity was completed in January 2012.

This final draft was sent to the LD's department through Ministry of Power & Energy (MOPE) on 23-01-2012 for necessary action.

Reviewed final draft Act by LD's department has sent to the MOPE on 07.08.2012 for final observations.

After considering the observation of MOPE, the LG's Department submitted the final draft Act to the Ministry of Power & Energy with a copy to AG's Department on 19-10-2012.

The draft Act is being reviewed by AG's Department.

3.5 Uneconomic Transactions

(a) Said Bank account was closed with the approval of the Board.

(b) On the request of Hon'ble Minister of Power and Energy, the Authority made arrangements to carry out a study to locate the leakage of the Samanalawewa reservoir. The Board of the AEA decided that the credibility of this work should go to R& D programme of the Authority and in order to highlight effectiveness of R&D for future requests for activities and funding ,the Board approved to cover the cost incurred from the R&D vote of AEA. However, Authority has sent a letter to the General Manager of the CEB requesting to reimburse the cost from the CEB.

© This amount represents the funds received from the Treasury on equipments ordered during the year 2011. Relevant equipment were received during the month of January/ February 2012.

3.6 Accountability and Good Governance

(a) Corporate Plan: Corporate Plan 2011-2015 was received from the consultants in August 2011.Since, unexpected difficulties have been met at the collecting and analysis of data unable to completed that task with in budgeted period .Therefore the payments were made without considering the dead line.

(b) Internal Audit

The Board of Directors recommended strengthening the Internal Audit branch. Board has approved to create carder position for management assistant post for internal audit activities and it was sent Department of Management Service for approval.

Further to the above a request has been made by the Ministry of Power and Energy to recruit officers through graduate scheme. This process is in progress.

3.7 Budgetary Control

(a) Every possible effort has been taken to maintain a realistic budget in the year 2011. Necessary revisions were effected with the approval of the Board when observed the variances.

Revenue budget was exceeded than expected income due to unexpected incidences (A new income source introduced with the Fukushima accident as a result food testing income had been increased by 58% compare to the year 2010).

4. Systems and Controls

Special attention will be drawn on the items mentioned under the above heading during the year 2012 in order to correct or minimize the deficiencies.

R. L. Wijayawarde

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Chairman
Atomic Energy Authority