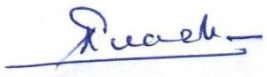
NATIONAL ENGINEERING RESEARCH AND DEVELOPMENT CENTRE OF SRI LANKA

ACKNOWLEDGEMENT

The Management expresses and places on record its appreciation to the Ministry of Housing & Samurdhi, the Ministry of Science & Technology, foreign governments and funding agencies for providing facilities for training and for the financial assistance provided for the research activities. The Chairman and Board of Directors of the Centre thank all its employees for the cooperation and assistance extended by them in the activities of the Centre.



Dr. T A G Gunasekera
Chairman
NERD CENTRE OF SRI LANKA

C O N T E N T S

01. Acts, Legislation & Corporate Governance

National Engineering Research And Development Centre of Sri Lanka (NERDC) was established in 1974 in accordance with the provisions of the State Industrial Corporations Act No. 49 of 1957 and now it is functioning under the purview of the Ministry of Technology and Research. NERDC is one of the premier Institute established under the aforesaid Act with the primary objective of promoting and facilitating the Development of Domestic Engineering and Technological Research Industry. The Centre is instituted at Industrial Estate, Ekala, Ja-Ela.

VISION

"To be a Centre of Excellence, in Engineering Research and Development Centre in the S E Asia and to be able to make substantial contributions towards the sustainable economic and social development of the people of Sri Lanka through engineering interventions."

MISSION

"To develop, acquire, adapt & transfer engineering technologies that would help in the production and sustainable utilization of human and material resources by engaging in R&D activities that would have a direct impact on the economic development of Sri Lanka and on the improvement of the living standard of the people."

OBJECTIVES

- *To provide for an institutional mechanism needed for the progressive development of indigenous technology by encouraging, recognizing and developing innovative and creative talent in Sri Lanka.*
- *To provide facilities to co-ordinate the technological, engineering and research capabilities of various public and private sector industries and institutions in a productive manner through co-operative endeavor.*
- *To ensure by adoption and adaptation the choice of technologies that would be consistent with the country's resource endowments and national planning objectives.*
- *To examine direct and indirect mechanism of technology transfer and offer counsel to appropriate government and private institutions in Sri Lanka, when required to do so.*
- *To promote the optimal exploitation of the country's human and material resources, particularly labor and raw material resources by promoting the growth of suitable technology.*
- *To design, manufacture, and test prototype machinery, pilot plants as demanded by Industrial, commercial and other end users in an economical manner.*
- *To provide for continuous monitoring of technological data and documentation relating to engineering designs and research through the co-operation of international and national agencies.*
- *To offer sustained consultancy services to public and private sector enterprise and undertake research and promote training activities to broaden the base of the country's engineering and industrial design and research capabilities.*
- *To make provision for purpose connected with engineering, research and development related to matters aforesaid.*

02. Board of Directors and Organization Structure

Name	Position	Workplace	Qualifications
Eng. D A S Wijayapala	Chairman (up to 18.12.2014)	NERD Centre of Sri Lanka 2P/17B,Industrial Estate, Ekala, Ja-Ela	BSc Eng (Hons) M Eng, P Eng, FIE(SL), C Eng
Mrs. Dahara Wijayathilake	Member	Secretary Ministry of Technology & Research	LLB
Eng. Parakrama Jayasinghe	Member	Director Geotech (Pvt.) Ltd. 13/1, Pepiliyana, Mawatha, Kohuwala, Nugegoda	BSc Eng (Hons), FRMIT (Australia), FIE (SL) C Eng, PE
Dr. Rohan Munasinghe	Member	Director/Snr. Lecturer Intellegent Machines Laboratory University of Moratuwa	PhD (Saga), C Eng, MIEFE
Dr. J A Gayan Chamantha	Member	Doctor WijayaKumarathunge Hospital Seeduwa	MBBS
Dr. M W Jayaweera	Member	Senior Lecturer University of Moratuwa	B Sc Eng. (Hons) PhD (Saitama)
Eng. K H J Managela	Member	Lecturer Mechanical Engineering Dept. University of Moratuwa	B Sc Eng (Hons),
Mrs. K V C Dilrukshi	Member	Asst. Director	**B Sc (Accountancy) Sp,** Associate Member of the Institute of Chartered Accountants of Sri Lanka

OFFICE ADDRESS

2P/17 B, Industrial Estate
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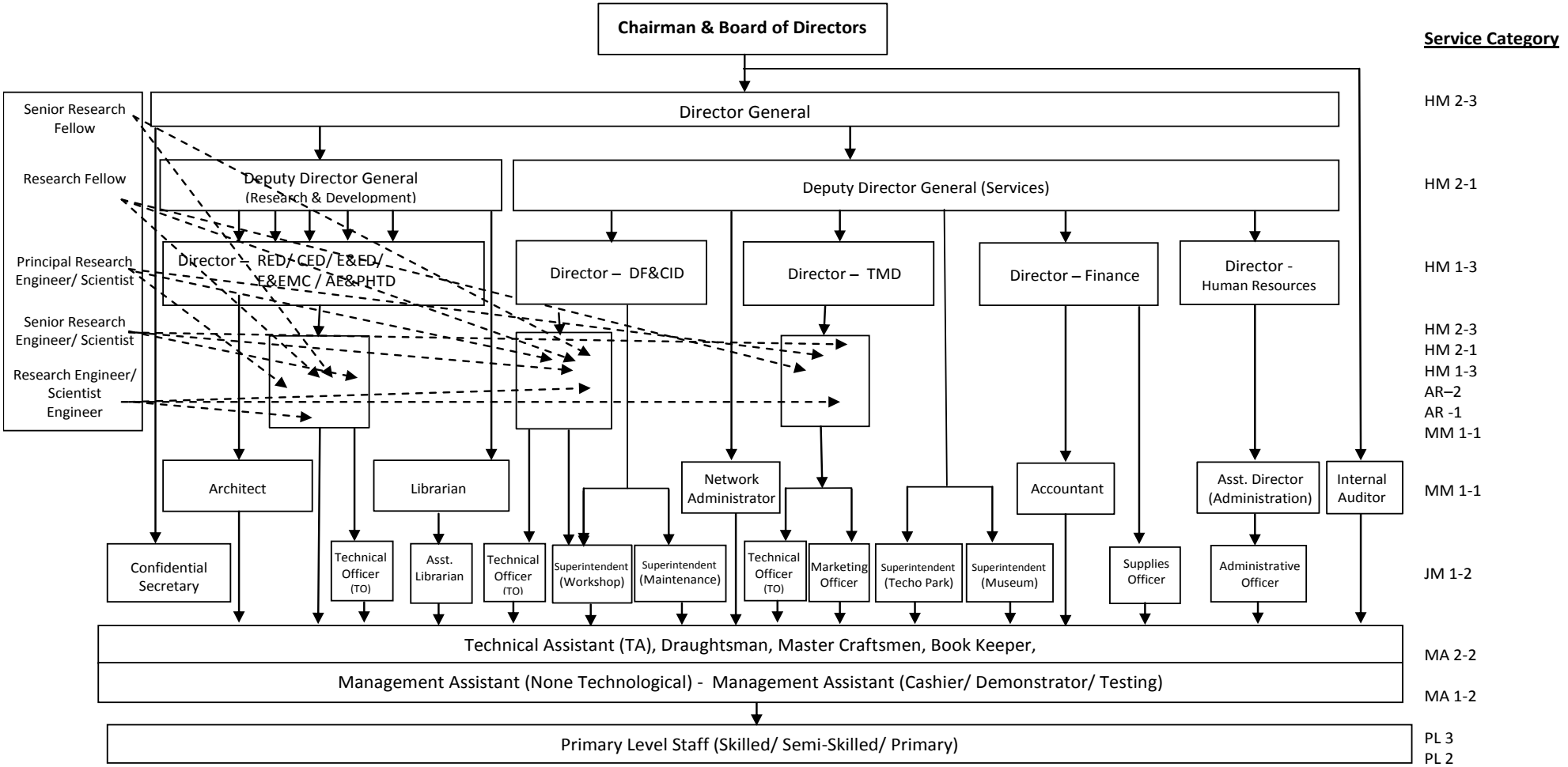
BANKERS

- **Bank of Ceylon, Ja-Ela**
- **Bank of Ceylon, Corporate Branch**
- **People's Bank, Ja-Ela**

AUIDITOR

Auditor General

National Engineering Research and Development Centre of Sri Lanka
Organization Structure



RED - Renewable Energy Department
CED - Civil Engineering Department
E&EMC - Energy & Environment Management Centre
EED - Electrical & Electronic Engineering Department
AE&PHTD - Agriculture Engineering & Post Harvest Technology Department
DF&CID - Design Fabrication & Consultancy Service for Industries Department
TMD - Techno Marketing Department

03. Chairman's Message

The National Engineering Research and Development Center (NERDC) is a premier Engineering Research and development organization in Sri Lanka. The Centre has been involved in research and development projects, pilot projects, providing services to industries, popularization programs, and promotion of science education among school children during the year 2014. Output and outcome of the activities have contributed to the development of the country's economy matching the government's development program in different key areas such as energy, shelter, water, and development of small and medium level industries.

In order to share knowledge, physical resources, human resources and infrastructure for both NERDC and Universities to generate more effective research output for the development of the country, Centre has initiated a special program to sign the MOUs' (Memorandum Of Understanding) with all Engineering Faculties of the country in 2014.

Research, development and pilot projects, Construction projects, Consultancy Services, Services to industry, Popularization activities, Upgrade science education are the major categories of activities carried out by the NERDC in year 2014 based on the annual program of year 2014. NERDC has been involved in research and development activities to develop number of technologies and products focusing on key requirements of the country such as addressing the energy crisis, housing for people, agriculture, environmental and market garbage issues, and technical issues in industries.

Considering the energy sector; development of the Biomass fuelled temperature controllable bakery oven for rice flour bakery product and Implementation of fuel wood chips feeding system in selected tea factories are the key projects handled by NERDC during the year 2014.

Construction of buildings with NERDC cost effective technology for Provincials Councils has commenced in the Western and Southern provinces with the assistance of the Finance Commission in order to optimize the resources of Provincial Council spending on building construction. During 2014, several building projects have seen commenced in Colombo, Kalutara and Galle districts. Development of Hollow Core Slab System and optimizations of NERDC's slab system, development of a flood barrier for domestic application and improvement of a machine for manufacturing of compressed cement stabilized soil blocks are the projects represented in the area of Civil Engineering.

Considering the agriculture and post-harvest sphere, development of an aquatic weeder for cleaning of irrigation main canal and large drainage canal in flood plain, development of a fertilizer applicator for coconut plantations, development of a power weeder for paddy land and development of heat exchanger for Cinnamon oil distillation are the key projects carried out in 2014

To popularize the technologies developed by NERDC and to transfer the technologies to suitable entrepreneurs throughout the country, the center has implemented various programs such as both in house and outside training programs, awareness programs, and demonstration programs. NERDC Conducted two days residential science camp for science students and science teachers at the Technology Park in order to upgrade their knowledge of science by involving them in creative science environments. In addition to that demonstration and transferring technologies such as participating in TV programs, writing newspaper articles, participating in exhibitions, etc. has been made in 2014.

The NERDC was established in the year 1974and 40th Anniversary is fallen in 2014. To celebrate the NERDC 40th Anniversary, Open day ceremony was conducted on 8th November 2014 in coincide with the National Science Week organized by the Ministry of Science & Technology.. The Open day program at Technology Park, demonstration on different technologies was carried out for the general public. Parallel to these events, Research symposium for year 2014 conducted at the NERDC auditorium with the participation of all NEDRC Engineers. During the symposium 12 research papers were presented among them the best 03 research papers selected were rewarded.

NERDC has been involved in consultancy work in all aspects of main engineering disciplines such as civil, electrical, renewable energy, environment and energy, agriculture and post-harvest engineering in order to cater to the demand from industry. Consultancy services and different technical services have been done for both large and small industries based on the issues related to waste water treatment, boiler efficiency, energy losses, cleaner production, sound pollution, air pollutions, construction etc. Special training programs have been conducted for the people involved in industries in different areas such as waste water treatment, generation of bio gas, cleaner production, boiler efficiency, automation, etc.

One major task of the NERDC in year 2014 was to promote the technology transfer activities relevant to technologies and products developed by the organization based on research and development findings during the past few years. In order to achieve the targets, center has initiated different programs with assistance from both government and private sector.

In order to execution of all the above functions, leadership given by Eng. D.D.Ananda Namal, Director General of the Centre towards developing the institution to be the Premier Engineering Research and Development Organization of the country, is most commendable and it has been a pleasure working with him for enhancing services of the Centre. The efforts, he has taken to develop the Action Plan of the Centre and to continuously monitor the same for its effective implementation is very much appreciated. I also wish to take this opportunity to thank the Higher Management, the Heads of Departments, Research Engineers/Scientist, Technologist, Technician and the Support Staff for the services rendered by them to achieve the objectives of the Centre.

ENG. ANURA WIJAYAPALA
CHARIMAN

04. Top Management and Executive Staff

CHAIRMAN

Eng. D A S Wijayapala - M Eng, BSc Eng (Hons), P Eng, FIE(SL), C Eng

DIRECTOR GENERAL

Eng. D D Ananda Namal – M Eng (Energy Technology), BSc Eng (Hons), C Eng, MIE(SL)

DEPUTY DIRECTOR GENERAL (RESEARCH & DEVELOPMENT)

Eng. G K K A De Silva - MSc (Building Technology), BSc Eng (Hons), C Eng, MIE (SL)

DEPUTY DIRECTOR GENERAL (SERVICES)

Mr. A H Piyasiri – MSc (Management of Technology), BSc Eng Hons

EXECUTIVE STAFF IN DEPARTMENT WISE

Energy & Environmental Management Centre (E&EMC)	**Research Fellow (Acting Administrative HoD)**		
	Eng. K T Jayasinghe	M Eng, BSc Eng	
	Senior Research Scientist		
	Mrs. P M G Pathiraja	MSc (Environmental S&T),BSc Special	Up to 27/08/2014
	Research Engineer		
	Ms. N P T Perera	MSc, BSc Eng (Hons.)	
	Mr. M D Sahardeen	BSc Eng	
	Mr. R Tushyanthan	NDT, AM IMech E (UK), AMIE (SL)	Up to 22/05/2014
	Ms. W M W Weerasekera	BSc Eng (Hons)	Up to 01/04/2014
	Mr. U L D Maduranga	BSc Eng (Hons)	Up to 10/03/2014
	Mr. K P D D Jayasekera	BSc Eng	
	Mr. T K Geeganage	BSc Eng	From 01/07/2014
	Mr. T S Malinda	BSc Eng	From 01/07/2014 up to 06/08/2014
Civil Engineering Department	**Director (Technical) Civil Engineering Department**		
	Eng. (Mrs) J A C Chrishanthi	BSc Eng, C Eng, MIE(SL)	
	Principal Research Engineer		
	Eng. W W P K Perera	M Eng (Struct), BSc Eng (Hons), C Eng MIE (SL)	
	Mr. W P R D Weerasinghe	NDT, CEI Part I, IESL Part I	
	Engineer		
	Mrs. D M A K Digala	NDES (Civil Eng), CEI (UK) Part I	
	Mrs. K S S Weerasinghe	Special Apprentice (Civil Eng.), IESL (Part I)	
	Research Engineer		
	Mr. M M A Ranasingha	B.Sc Eng. (From 23/04/2014 up to 28/04/2014)	
	Mr. I P Batuwita	B Sc Eng	From 01/07/2014
	Mr. A N S Amaradasa	B Sc Eng	From 07/07/2014
	Mr. M A Y Rasmy	B Sc Eng	From 22/09/2014
	Architect		
	Ms. B A P H Manorima	MSc (Architecture), BSc (Built Env),	

Renewable Energy Department (RED)	**Research Fellow (Head of the Department)**		
	Mr J A A D Jayasuriya	M Eng, BSc Eng	
	Eng. W K R Peiris	MPhil, MA (Buddhist Stud), BSc Eng, C.Eng. MIE(SL)	
	Eng. N K Edirisinghe	M Phil, BSc Eng	
	Engineer		
	Mr. W A L S Karunawardana	HNDE	
	Research Engineer		
	Mr. N W W V S Pathum	BSc Eng, AMIE (SL)	Up to 18/07/2014
	Mr. E B U C Kumara	BSc Eng (Hons)	
	Ms. E Nadeeshani	BSc Eng,(Hons)	From 01/07/2014
	Mrs. G S R Costa	BSc Eng, AMIE(SL)	From 01/07/2014
Agriculture Engineering & Post-Harvest Technology Department (AE & PHT)	**Director (Technical) - Agriculture & Post Harvest Technology**		
	Eng. K Y H D Shantha	MSc Eng., BSc Eng,	
	Principal Research Engineer		
	Mrs. Y M M K Ranathunga	NDT	
	Research Engineers		
	Mrs. P M Y S Pathiraja	BSc Eng	
	Mr. S A P Shalinda Silva	BSc Eng	
	Ms. M A N Sugandi	B Tech, AMIE (SL)	
	Mr. Y S J Kumaranayake	BSc Eng	Up to 30/06/2014
	Eng. K D S Premakumara	BSc Eng	From 03/07/2014
	Engineers		
	Mr. P A U W K Paranagampola	NDES	
Electrical & Electronics Engineering Department	**Research Fellow (Head of the Department)**		
	Eng. (Mrs) N G D Wijesiriwardane	M Eng, C Eng, MIE (SL)	
	Senior Research Engineer		
	Mr. S Vidyaratne	MSc, BSc Eng, AMIE(SL)	
	Research Engineers		
	Mr S M Handagala	BSc Eng	Up to 28/02/2014
	Eng. H M C N Herath	BSc Eng Hons, AMIE (SL)	Up to 18/04/2014
	Eng. D R S K Wimalaratne	B Tech Hons, AMIE (SL)	
	Engineers		
	Mrs. H D C Hettiarachchi	NDT	
	Mr. H S Jayawickrama	BSc Eng	Up to 14/08/2014
Design Fabrication & Consultancy for Industry Department (DF & CI)	**Director (Technical) - Design Fabrication & Consultancy to Industry**		
	Mr A A S P Jayasinghe	BSc Eng (Hons)	
	Principal Research Engineers		
	Eng H M L U Herath	BSc Eng	
	Eng A R C Salgado	BSc Eng	
	Research Engineers		
	Eng S P Perera	EC (UK) Part I & II, NDT, AMIE(SL)	
	Engineers		
	Mr. N A D D J Prasanne	NDT	
	Superintendent – Maintenance		
	Mr. W H S Ramal Silva	NDES	

Techno Marketing Department (TMD)	**Director (Technical) - Techno Marketing Department**	
	Eng. M A M Fernando	PG Dip (Energy) IESL Part I & II, CEng, MIE (SL)
	Principal Research Engineer	
	Mr. D V Wimalasena	NDT, Dip in Marketing(SL)
	Marketing Officer	
	Mr. S Wijesooriya	BSc (Agriculture) Sp Master of Business Studies (MBS)
	Superintendent - Technology Park	
	Mr. A A N S Adikari	BSc
	Superintendent - Museum	
	Mrs. B D P S Ranaweera	BSc
Mechatronic Division	**Principal Research Engineer (Officer In-charge)**	
	Mr. D M Punchibanda	BSc Eng
	Research Engineer	
	Mr H P H Kumara	MSc Eng, EC(UK) PART I & II
	Ms. A L N Apsara Perera	BSc Eng. (Hons)
Human Resources Department	**Director (Human Resources)**	
	Mrs. J P A D S I Jayasekera	MPM, BSc, Dip in Personnel Mgt, Dip. in Advanced English Up to 01/05/2014
	Manager (Human Resources)	
	Ms. D A M Munasinghe	BSc (HRM), MBA (HRM) From 01/08/2014
	Assistant Director (Administration)	
	Mr. Rukman Gamage	B A (Social Science) Sp. M A in Sociology
Finance Department	**Finance Manager**	
	Mrs. D V S Perera	ICMA Professional Part II, IPFA, ICEA
	Accountant	
	Mr. J M R S Jayasinghe	BBA (Busi. Admin) Special , MBA ICASL - Professional Part I
Internal Audit Division	**Internal Auditor**	
	Mr. B P Susantha Kumara	HNDA
Supplies Division	**Supplies Officer**	
	Mr. R H A Jeewananda	BSc (Physical Science)
Library	**Librarian**	
	Mrs. D M T P K Devagiri	MSSc, B A (Library Science) Sp. ASLLA
Information Technology Section	**Network Administrator**	
	Mr. B P Wickramasooriya	BSc (Computing & Information Systems)

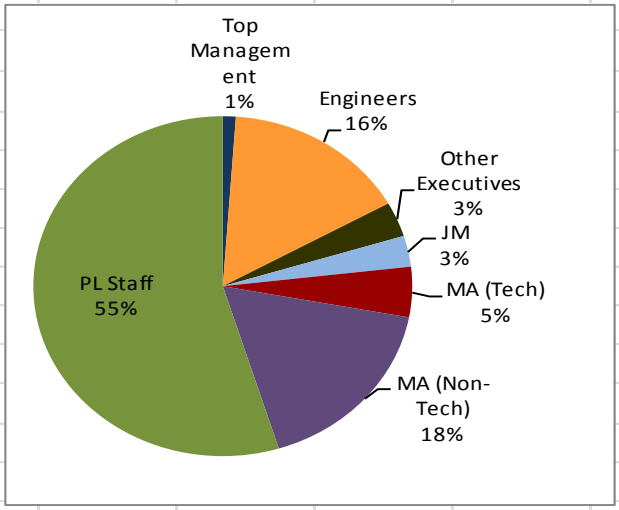
05. Human Resources

Human resource is a vital element of any organization in accomplishing its goals and objectives. The major problem identified in Human Resource Management (HRM) of the Centre is the recruitment and retaining of competent researchers/ scientists. (This is a common issue in research organizations in Sri Lankan State sector). A comprehensive integrated strategy is required to address this issue, such as national policy on researchers/scientists programming, research application for national development and recruitment, incentives, rewards, recognitions, capacity development of researchers/scientists etc.

Within the capacity and limitations of the Centre has undertaken all the measures to recruit and retain research/scientific staff through the strategy like providing capacity development opportunities (Eg: Higher studies, training & development, international exposures, etc.), creating facilitating environment, assisting carrier development etc.

Summary Information on Staff Strength

Staff Category	Nos
Top Management	3
Engineers	43
Other Executives	9
Junior Managers (JM)	8
Management Assistants (Tech)	13
Management Assistants (Non-Tech)	47
Primary Level (PL) Staff	149
Total	**272**



Following new recruitments had been made externally at the Centre during the year 2014.

	Name	Designation	Department	Date of Recruitment
01	Mr. R Gamage	Assistant Director (Admin)	HR	01/01/2014
02	Ms. A L N Apsara Perera	Research Engineer	RED	01/01/2014
03	Mr. S D S P Solangarachchi	Senior Research Engineer	RED	06/01/2014
04	Mr. B P Wickramasooriya	Network Administrator	IT Section	17/02/2014
05	Mr. M M A Ranasinghe	Research Engineer	Civil	23/04/2014
06	Mr. G U De Silva	Research Engineer	E&E	01/07/2014
07	Mr. I P Batuwita	Research Engineer	Civil Eng.	01/07/2014
08	Ms. E Nadeeshani	Research Engineer	RED	01/07/2014
09	Ms. G S R Costa	Research Engineer	RED	01/07/2014
10	Mr. T S Malinda	Research Engineer	E&EMC	01/07/2014
11	Mr. T K Geeganage	Research Engineer	E&EMC	01/07/2014
12	Mr. K D S Premakumara	Research Engineer	AE&PHT	03/07/2014
13	Mr. P N S Amaradasa	Research Engineer	Civil Eng.	07/07/2014
14	Mr. A W C Amarasinghe	Driver	HR	21/07/2014
15	Mr. H U S Bandara	Driver	HR	21/07/2014
16	Mr. S H W G Sumathipala	Driver	HR	28/07/2014
17	Ms. D A M Munasinghe	Manager (Human Resources)	HR	01/08/2014

	Name	Designation	Department	Date of Recruitment
18	Mr. P K D M M Alwis	Technical Assistant	AE&PHT	01/08/2014
19	Mr. T G S P Thambawita	Technical Assistant	E&E	01/08/2014
20	Mr. K C S Silva	Technical Assistant (Contract)	RED	01/08/2014
21	Mr. K A K T Rupasinghe	Technical Assistant	AE&PHT	01/09/2014
22	Mr. M G Aruna	Driver	HR	09/09/2014
23	Mr. S M Azham	Technical Assistant	Civil Eng.	18/09/2014
24	Mr. M A Y Rasmy	Research Engineer	Civil Eng.	22/09/2014

Following Staff Members had resigned/retired from the Centre in the year 2014.

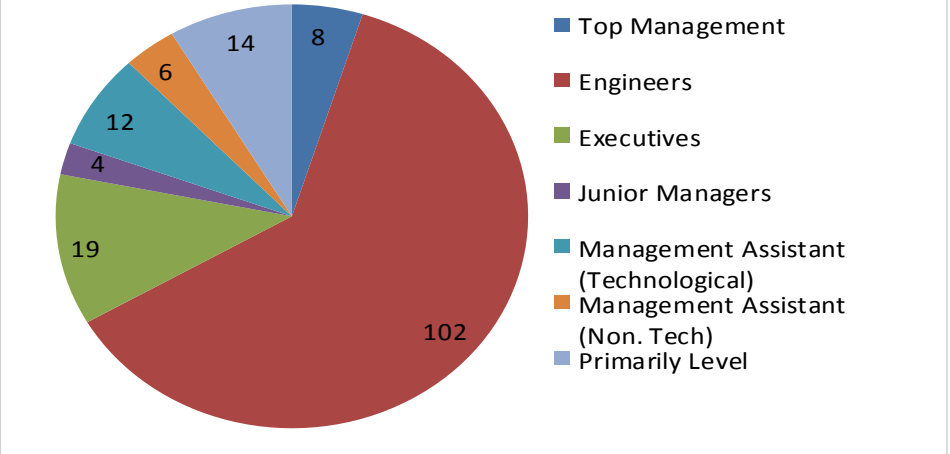
No	Name	Designation	Department	Leaving Date
01	Mr. S D S P Solangarachchi	Senior Research Engineer	RED	08/01/2014
02	Mr. A M G D Abeysinghe	Technical Assistant (Contract)	RED	20/02/2014
03	Mr. G G Mangala Perera	Tool Keeper	AE&PHT	26/02/2014
04	Mr. S M Handagala	Research Engineer	E&E	28/02/2014
05	Mr. U L D Maduranga	Research Engineer	E&EMC	10/03/2014
06	Mr. M M Nimal Ranathunga	Mason	RED	07/03/2014
07	Ms. W M W Weerasekera	Research Engineer	RED	01/04/2014
08	Mr. L A D D Liyanarachchi	Driver	HR	07/04/2014
09	Mr. M Sirithunga	Fabricator	Civil	09/04/2014
10	Mr. T J Amarasinghe	Welder/Fitter	DF&CI	11/04/2014
11	Ms. H M C N Herath	Research Engineer	E&E	18/04/2014
12	Mr. M M A Ranasinghe	Research Engineer	Civil	28/04/2014
13	Miss J M M S K Jayalath	Technical Assistant	E&E	30/04/2014
14	Mr. M K S S Kumara	Technical Assistant	E&E	04/05/2014
15	Ms. I S Galabada	Technical Assistant	E&EMC	04/05/2014
16	(Mrs.) J P A D S I Jayasekera	Director (HR)	HR	04/05/2014
17	Mr.W A Bandula Fonseka	Welder	RED	12/05/2014
18	Mr. W P R S Senarathne	Technical Assistant	AE&PHT	13/05/2014
19	Mr. R Thushiyandan	Research Engineer	E&EMC	22/05/2014
20	Mrs. K H D S P Kumarasinghe	Management Assistant	HR	19/06/2014
21	Mr. Y S J Kumararanayake	Research Engineer	RED	30/06/2014
22	Mr. N W W V S Pathum	Research Engineer	RED	18/07/2014
23	Mr. V R P M I Sanathake	Office Aide	AE&PHT	21/07/2014
24	Mrs. B A D P R Balachandra	Management Assistant	E&E	04/08/2014
25	Mrs. P M G Pathiraja	Senior Research Scientist	E&EMC	27/08/2014
26	Mr. H H Sarath Kumara	Management Assistant	Civil Eng.	30/09/2014
27	Mr. T S Malinda	Research Engineer	E&EMC	06/08/2014
28	Mr. H S Jayawickrama	Engineer	E&E	14/08/2014

5.1 Staff Training and Development

Since the Key role of the NERDC is engineering research and development, constant concern is tendered in human resources development by the management. Accordingly all steps are taken to enhance knowledge, skills, and competencies with correct attitudes in all categories of the staff having purposes of obtaining efficient and effective service to the Centre and career development of the staff.

Capacity building and skills development training opportunities provided in 2014 are as follows.

Service Category	Nos. of Training Facilities Provided
Top Management	8
Engineers	102
Executives	19
Junior Managers	4
Management Assistant (Technological)	12
Management Assistant (Non. Tech)	6
Primarily Level	14
Total	**165**



◈ This includes the facilities and provisions for providing National Vocational Qualification (NVQ) level 3/ 4 /5 for eleven (11) no. of employees in primary level categories.

5.1.1.2 Outbound Training Programs

Three (03) days Residential Outbound Training and Development Program was arranged and it was on leadership development conducted by Sri Lanka Army Special Force at Maduru Oya camp. Details of the staff participated are as follows;

Training Group	Nos.	Dates
1. Engineering & Executive Staff	48	21 - 23 Feb. 2014
2. Engineering , Executive, Junior Manager & Management Asst. categories	74	12 - 14 Sept. 2014

NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANAKA

FOREIGN SCHOLARSHIPS/SEMINARS/TRAINING-PROGRAMMES/WORKSHOPS - 2014

	NAME & DESIGNATION OF THE OFFICER	DEPARTMENT	NAME OF THE PROGRAMME	PERIOD	COUNTRY	SPONSORING INSTITUTIONS
1	Eng. W D A S Wijayapala Chairman		Third BIMSTEC Summit and Related Meetings	1-4 March 2014	Myanmar	Ministry of External Affairs
2	Eng. W D A S Wijayapala Chairman		South Asian Countries Science & Technology Meeting	05-08 June 2014	China	Ministry of Science & Technology, China
3	Mr. D M Punchibanda Principal Research Engineer	RED	Intel International Science and Engineering Fair	12 - 16 May 2014	USA	Intel Corporation
4	Eng. D D Ananda Namal Director General	Management	Regional Senior Official Meeting cum Exhibition on Innovation and New Technology R & D and Commercialization	09-11 June 2014	Iran	Indian Ocean Rim Association (IORN)
5	Mr. A H Piyasiri Deputy Director General (Services)	Management	Regional Senior Officials' Meeting cum Exhibition on Innovation and New Technology, R&D and Commercialization	09-11 June 2014	Iran	Indian Ocean Rim Association (IORN)
6	Eng. W D A S Wijayapala Chairman		Tenth Meeting of the Technical Committee, ESCAP Consultative Meeting with Chinese Inventors and Technology Stakeholders on Technology Facilitation for Sustainable Development and 8th IEIK 2014	19-22 November 2014	China	APCTT
7	Eng. G K K A De Silva Deputy Director General (Research & Development)	Management	International Workshop on 'Science, Technology and Innovation (STI) Policy Making for Developing Countries	28 Nov.- 01 Dec. 2014	Iran	Science and Technology of the Non-Aligned and Other Developing Countries **(NAM S&T Centre)**
8	Mrs. D R S K Wimalaratne Research Engineer	Electrical & Electronic Engineering	International Training Programme on Industrial Electronics & Instrumentation	15 Oct.- 19 Dec. 2014	India	Government of India under India Technical Economic Co-operation (ITEC)

06. Performance Highlights of the Year 2014

As a premier Engineering Research and development organization in Sri-Lanka, The National Engineering Research and Development Center (NERDC) has been involved in research and development projects, pilot projects, providing services to industries, popularization programs, and promotion of science education among school children during the year 2014. Output and outcome of the activities have contributed to the development of the country's economy matching the government's development program in different key areas such as energy, shelter, water, and development of small and medium level industries.

During the year 2014, Centre has initiated a special program to sign the MOU (Memorandum Of Understanding) with all Engineering Faculties of the country in order to improve the quality and productivity of the research carried out by both parties. This will help to share knowledge, physical resources, human resources and Infrastructure for both NERDC and Universities to generate more effective research output for the development of the country. Under this program, the MOU with the University of Moratuw a has been signed and MOU with the University of Ruhuna is ready for signing by the two parties.

During the year 2014, NERDC has conducted a two day residential science camp for science students and science teachers at the technology park of NERDC in order to upgrade their knowledge of science by involving them in creative science environments.

Construction of buildings with NERDC cost effective technology for provincials councils has commenced in the Western and Southern provinces with the assistance of the Finance Commission in order to optimize the resources of provincial council spending on building construction. During 2014, several building projects have commenced in Colombo, Kalutara and Galle district.

Considering the energy sector; development of the Temperature Controllable Biomass based Bakery Oven is one of the key projects handled by NERDC during 2014 and the Centre was able to complete the development of the bakery after completing a number of developments which was started in year 2013. As of now, the bakery is ready for handover to a suitable party for field testing operations before the transfer of technology. Application of fuel wood chip for tea drying processes in tea industry has been completed. New system has been installed at the New Hope tea factory, Balangoda and few demonstration trials have been conducted. It is ready for the technology transfer process. The system will be commissioned at the end of February 2015.

Considering the agriculture and post-harvest area, the attachment developed for application of fertilizer for coconut plantation by the NERDC has been demonstrated and now ready for technology transfer process. Program for the technology transfer process has been planned in early 2015. Power weeder to remove the weeds in paddy lands has been completed and few trials have been successfully completed. The demonstration program for large scale operation is to be organized with the Mahaweli authority and the department of agriculture in 2015.

To popularize the technologies developed by NERDC and to transfer the technologies to suitable entrepreneurs throughout the country, the center has implemented various programs such as both in house programs and outside training programs, awareness programs, and demonstration programs. NERDC Open day program for Technology Park and demonstration on different technologie swere carried out for the general public on 07.10.2014 in order to commemorate National Science Week organized by the Ministry of Science & Technology. In addition, Research symposium for year 2014 has been conducted at the NERDC auditorium with the participation of all NEDRC Engineers. During the symposium 12 research papers were presented.

Consultancy services and different technical services have been done for both large and small industries based on the issues related to waste water treatment, boiler efficiency, energy losses, cleaner production, sound pollution, air pollutions, construction etc. Special training programs have been conducted for the people involved in industries in different areas such as waste water treatment, generation of bio gas, cleaner production, boiler efficiency, automation, etc. In 2014, several measures had been taken to popularize, demonstrate and transfer technologies such as participating in TV programs, writing newspaper articles, conducting training programs on developed technology, participating in exhibitions, etc.

Major activities carried out by NERDC in year 2014 can be summarized in to 6 major categories based on the annual program of year 2014, and the most important activities are highlighted.

1. Research, Development and pilot projects
2. Construction projects
3. Consultancy Services
4. Services to industry
5. Popularization activities
6. Upgrade science education

1. Research and development activities and pilot projects

- NERDC has been involved in research and development activities to develop number of technologies and products focusing on key requirements of the country such as addressing the energy crisis, housing for people, agriculture, environmental and market garbage issues, and technical issues in industries. Achievements of few important research and development projects are given below.

1.1 Project :Biomass fuelled temperature controllable bakery oven for rice flour bakery products

Fig 01: The hearth of the Heat exchanger

Fig 02:Demonstration to Board of Directors

Objective:

To develop and disseminate technology for temperature controllable biomass based bakery oven to produce bakery food made with rice flour.

Advantages:

- Diesel operated and LP Gas Operated bakery oven can be replaced
- Conventional bakery required huge amount of the firewood and saving about 30% compare to conventional system.
- Can be moved from place to place
- Facilities for controlling temperature
- Loading and unloading of bread can be done by mechanical system
- Sustainable fuel wood such as Gliricida can be used as fuel

Present status:

Developments have been completed and ready to hand over to suitable baker for continues operations

1.2 Project: Implementation of fuel wood chips feeding system in selected tea factories

Fig 03: Fuel wood chips feeder installed at the New Hopewell tea factory at Balangoda.

Fig 04: Installed fuel wood chipper and wood chips feeder in operation at New Hopewell tea factory, Balangoda

Objective:

Technology transfer of fuel wood chips feeding system and implementation of this technology in selected tea factories for tea drying process.

Advantages :

- 25% of firewood can be saved compared to conventional wood log or split wood feeding system.
- Gliricidia can be planted in mass scale as feeding material and it will provide employment opportunities

Present status of the project:

Complete system has been installed at New Hope Tea Factory at Balangoda and a number of demonstrations programs were conducted and the technology transfer process will be planned early next year

1.3 Project: Development of Hollow core slab system

This project was initiated on the demand of the house builders on flat soffit precast slab system for housing. Soffit of the NERDC developed cost effective slab systems are not flat and this development will provide solutions for the precast slab system with flat slab. Presently the load testing of the slab is in progress.

Fig 05: Development of hollow core slab system

Fig 06: Development of hollow core slab system

1.4 Project: Optimizations of NERDC's Slab system

This research project was initiated to optimize the NERDC composite floor slab system by reducing one of the high tensile steel wires. It is expected to reduce the price of pre-stressed concrete beams by 15%. The project was started in January 2014 and at the end of the year, 55% of the research work was completed.

Fig 07: Optimization of NERDC slab system

Fig 08: Optimization of NERDC slab system

1.5 Project: Development of an aquatic weeder for cleaning of irrigation main canal and large drainage canal in flood plains.

Department of irrigation has requested NERDC to develop an aquatic weeder for cleaning of the drainage system relevant for flood protection, as cleaning of canals with manual methods is expensive and unproductive. NERDC has taken this challenge and now, the development of a machine on a pontoon is in progress. Preliminary design is completed and fabrication of pontoon and weeding device are in progress.

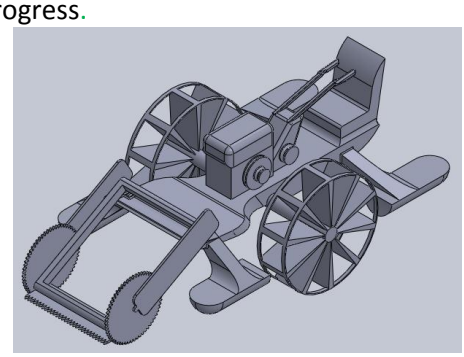


Figure 09: Sketch of an aquatic weeder

1.6 Project: Compact waste water treatment system for Vehicle Service Station

Considering the space requirements for a conventional waste water treatment system in vehicle service stations in urban areas, NERDC has initiated this project. First pilot project is already complete.

The project has been completed during 2014 and is ready for technology transfer process.

Advantages:

- Less space
- Low cost

Figure 10: Wastewater treatment system

1.7 Project: Development of a flood barrier for domestic application.

A Request has come from people and companies to develop a flood water gate for door opening of houses at low cost to protect the building and properties of houses located in flood plains. Considering this national need NERDC has developed and tested several flood gates at NERDC premises, in order to study the behavior of flood gates during the heavy raining periods. Presently four flood gates have been completed and waiting for field trials in the rainy season.

Figure 11: Flood barrier

1.8 Project: Development of a fertilizer applicator for coconut plantations.

NERDC has development an attachment for uniform application of fertilizer to coconut plants .This attachment can be attached to any hand tractor for operations Presently labor availability for fertilizer application to coconut plantation is a critical problem for coconut planters as manual application of fertilizer is not uniform and is a high labor consuming processes. The new machine will provide solutions to these issues. The activities and project technology transfer process has been completed.

Figure 12: Fertilizer applicator

1.9 Project: Development of a power weeder for paddy land.

The project is completed and waiting for field trials with Mahaweli authority and Department of Agriculture. Development of a power weeder will save the labor and reduce the cost of the weeding process. This machine is designed for removing weeds having height 6”-8”

Figure 13: Field Evaluation of Power Weeder

1.10 Project: Development of heat exchanger for Cinnamon oil distillation

Conventional system used for cinnamon oil distillation is not productive or efficient and produces a considerable amount of waste. Its heat exchange unit has been improved by NERDC and installed a unit at Polpitiya Cinnamon Research Center for field testing The new system introduced by NERDC will improve the productivity of the cinnamon industry minimizing wastage and production cost.

Figure 14: Heat exchanger for cinnamon oil distillation

1.11 Project: Improvement of a machine for manufacturing of compressed Cement stabilized Soil Blocks

Objective :
To develop a machine for manufacturing compressed cement stabilized soil block to improve the productivity and efficiency of the manufacturing process.

Advantages :
Output of currently available machines is not satisfactory. Hence people are reluctant to use cement soil block for building construction due to high cost of blocks and poor quality. New machine will be able to produce soil blocks at affordable price.

Figure 15: Machine for manufacturing compressed cement stabilized soil blocks

2. Consultancy work

NERDC has been involved in consultancy work in all aspects of main engineering disciplines such as civil, electrical, renewable energy, environment and energy, agriculture and post harvest engineering in order to cater to the demand from industry

2.1 Civil Engineering

2.1.1 Circuit Bungalow for the Department of Wildlife Conservation at Galoya National Park

The Circuit Bungalow is located in a Nilgala forest at Galoya National Park and it is blessed with a stunningly beautiful location and a relaxed atmosphere. The Galoya National Park is situated in the Monaragala District in the South East of Sri Lanka.

The Technology used to construct this circuit bunglow is completely developed by NERDC. Therefore they achieved a considerable reduction of cost compared to conventional methods, with effective technology.

Ground Floor area - 765Sqft
Upper Floor area - 183Sqft
Total Cost For the Circuit Bungalow Rs. 2.5 M

Figure 16: Nilgala Cabana building

2.1.2 Consultancy services for construction of Library building for WP/KG Christuraja Vidyalaya at Hekitta, Wattala.

This project was started with World Vision Lanka. The building was designed as a two storied building consisting of Library and a class room. But in year 2014, they want to construct only the Ground floor.

Ground Floor area - 525 Sqft
Total Cost For the Library building - Rs. 1.7 M

Figure 17: Library building for Christuraja Vidyalaya.

2.1.3 *Vidatha building -Balangoda*

Consultancy service has been given to construct Vidatha building at Balangoda, funded by the Ministry of Technology and research. Cost of the building is Rs 7.5 million.

Figure 18:Completed building for Vidatha center, Balangoda.

2.1.4 Consultancy services for construction and maintenance of crematorium and Incinerators

National Engineering Research and development center is the only premier engineering organization for providing consultancy services for repairing and improving crematoriums and incinerators in Sri Lanka. During 2014, following consultancy services have been given to different local government institutions:

Crematorium

- Urban Council Kalutara
- Urban Council Gampola
- Imaduva Pradesiya sabava
- Matugama Pradesiya sabava
- Aranayaka Pradesiya sabava

Incinerators

- Kurunagala Teaching hospital
- David Peris Motor Company-Piliyanadala

2.1.5 *Consultancy services to industry based on energy and environment areas.*

One major key area for consultancy services provided by NERDC is maintaining energy efficiency and meeting environmental standards, while improving productivity and allowing sustainable usage of natural resources for industry.

Following services have been completed on the request of the clients from the industries.

- Number of energy audits completed for the industry: 04nos
  Value of the services: Rs. 65000.00
- Environmental monitoring services as per the regulations for the industries: 140nos.
  Value of the services: Rs 350000.00
- No of issues solved for the industries: 60nos
  Value of the services: Rs 1.35 Million
- Environmental training program conducted for industries.04 nos
  Value of services: Rs 350000.00
- Industrial processes monitoring and consultancy: 40 nos
  Value: Rs 1.0Million
- Boiler performance and Flue gas analysis: 90 nos
  Value of the service: Rs3.9 million
- Electrical services: 06 nos
  Value of the service: Rs. 758000.00

2.1.6 Construction and fabrication works involved by the center based on developed technologies.

Following improvements and renovations works have been completed based on NERDC'S developed technologies:

- Renovations and improvements of crematorium at Ambalangoda, Wattegama, Ambilipitiya
  Value: Rs 1.6 m

2.1.7 Constructions works

Flap gates for controlling of water in minor irrigation has been introduced by the NERDC recently and technology provides a number of advantages compare to the conventional controlling system such as smooth flow controlling minimizing erosion and minimum damages to irrigation system during the rainy season.

Following flap gates have been constructed during the year 2014:

- Vigoda canal, Kurunagala
- Aturuvella canal

Figure 19: Flap gate

Construction of bio-gas plants

- Bio-gas units at Divulapitiya and Gampola (insert photo of biogas plant)
  Value: Rs 1.0 millions

2.1.8 Construction of Foot Bridges

Recently NERDC has introduced ferrocement technology for construction of foot bridges instead of Edanda used for small canal crossing in rural areas. Few footbridges have been completed and one foot bridge has been constructed to Ja-Ela Pradesiya Sabava to cross the branch of Hamilton canal.

- Number of beneficiaries: 25 families
  Span: 30 feet
  Cost: Rs 850000.00

Figure 20:Foot bridge

Foot Bridge constructed at Morawaka

This foot bridge has been constructed at Moravaka Deniyaya for plantation people using precast pre-stressed concrete beams.

- Cost of the bridge: Rs 750000.00
  Number of beneficiaries: 50 families

Figure 21: Foot bridge, Morawaka

2.1.9 Construction of building for Theme park at Peliyagoda

The government has decided to construct a theme park at Peliyagoda adjacent to the proposed construction city to demonstrate available building materials and technologies for the benefits of house builders in Sri Lanka. NERDC has used the opportunity to build a house for demonstration of all technology developed at NERDC for the benefit of house builders. The construction of house is in progress and all technologies developed by NERDC are to be demonstrated.

Figure 22: Theme park building

2.1.10 Laboratory testing

The NERDC has the laboratory facilities for environmental testing, civil engineering testing, Lamp testing and battery testing, materials testing and scanning ,and analyzing gas samples. Testing facilities for refrigerators have been installed at NERDC investing Rs 30 million as grant from United Nations. Testing facilities are not started and NERDC is the only place with these facilities in the South Asian region.

Figure 23: Refrigeration Testing Laboratory installed at RED

2.2 Design, fabrication and consultancy to industry (DFCI)

Design, fabrication and consultancy Services to industry unit has provided the services to manufacturing industry covering small scale, medium scale and large scale entrepreneurs. They have designs and fabricated molds for industries and an annual income for 2014 is Rs.3.4 Million.

DF&CI : has provided services to 69 customers in following areas.

Table 01:

Activity	**Achievement**	
	Nos.	**Financial (LKR)**
Design, manufacturing of plastic mold, rubber mold and press tools	08	2,110,000
Manufacturing of components	51	1,177,875
Material testing and scanning services	10	137,825

3. Popularization, Demonstration and Training activities

3.1 Technology Transfer Activities

One major task of the NERDC in year 2014 was to promote the technology transfer activities relevant to technologies and products developed by the organization based on research and development findings during the past few years. In order to achieve the targets, center has initiated different programs with assistance from both government and private sector.

Table 02: Programs conducted to popularize and to transfer the technologies:

Activity	Nos.	No. of participants	Income (LKR)
Training program on cost effective technologies	05	125	300000.00
Awareness program for Vidatha centers and other government offices	10	100	60000.00

3.2 Technologies transfer for entrepreneurs

In order to create new employment opportunities based on developed technologies, center has transferred technologies developed by NERDC for 20 persons:

Technologies	Number of licensee's
Cost effective building technologies	13
Industrial stove	01
Crematorium	02
Bio gas	02
Bakery oven	01
Vegetable dehydrator	01

3.3 *Laboratory Testing*

NERDC has provided laboratory facilities for the industry covering areas environment, waste water, construction ,biomass energy, etc. In addition to those tests, lamp testing and battery testing have been conducted on the request of Sri Lanka Standards Institution.

	Achievement	
Activity	**Nos.**	**Financial (LKR)**
Environmental Laboratory testing	650	1000000.00
Biomass Laboratory testing and other testing	04	168000.00
Material testing and scanning	15.0	134000.00
Civil Engineering Laboratory Testing	80.00	500000.00
Lamp Testing	570.00	32237000.00
Battery Testing	02	49300.00

3.4 Technology park and engineering museum

In year 2014 center has expand activities of the technology park to upgrade science educations among school children organized by the Ministry of Technology and Research. We have conducted three residential, two day programs for students selected from the whole country by National Science Foundation. In addition about fourteen thousand visitors have visited the Technology Park and the museum during 2014.

7. Welfare & Religious Activities

In order to enhance the interpersonal relationship, cooperation, teamwork of the staff and staff commitment to the institutional common activities, the NERDC are given special consideration for employee welfare and religious functions. Accordingly, summary of the activities executed by the welfare society and the religious societies in 2014 are as follows;

7.1 Welfare Society

Following activities have been undertaken by the welfare society of the NERDC during the year 2014

1. Organizing an awarding ceremony to offer prices for children of NERDC staff who have passed year five scholarship examination in 2014 at the ceremony of 40th anniversary of NERDC held on 08 November 2014.
2. Making arrangement for participating a team for inter organization "Elle" tournament organized by D.A. Rajapakse memorial foundation in Mathale on 19,20,21 June 2014.
3. Two days welfare trip was organized for staff members and their family members to go to Nuwaraeliya on 20, 21 December 2014
4. Participating staff members for blood donation campaign in Commemorating 95th Birth of late Vidyajothi Dr. A.N.S. Kulasinghe, one of the founder chairman of the NERDC.

7.2 Religious Society

Two religious societies have being actively operated in the NERDC, namely Buddhist society and Catholic society. These societies organize various religious and Corporate Social Responsibility (CSR) programs and activities in order to development of mental and spiritual wellbeing of the NERDC staff members. One prominent feature of these societies is that every employee of the staff is a member of either the Buddhist society or the Catholic society voluntarily.

Following religious activities have been performed by the two societies in the year 2014.

7.2.1 Buddhist society

1. In order to mark ceremonial commencement of Centre activities of the year 2014, a pirith chanting ceremony was conducted on 1st January 2014.
2. Conducted a Vesak Dharmadehana (sermon) by Ven. Amitha Thero, Jayasumanarama temple, Kudahakapola on 13.05.2014 at the Center
3. Organizing a Shrama Dhana program participating with staff members at Beligala Aranya Senasana on 27.09.2014
4. An alms giving program was held for the children in Jayawardena children's home, Weligampitiya, Ja Ela on 25.10.2014
5. Conducted a Dharmadehana (sermon) at Kulasinghe auditorium on 05.11.2014 by Ven. Dodanduwe Sirikara Thero to broadcast in Buddhist Radio channel.

7.2.2 Catholic Society

1. Arranged a pilgrimage to Madu church from 18 to 19 October 2014
2. Conducted annual Christmas Mass on 19.12.2014 at the NERDC by Rev. Father Anton Jayamanna.

8. Accounting Policies

General

1. Basis of Preparation

The balance sheet as at 31.12.2014 and the related financial statements have been prepared in accordance with Sri Lanka Public Sector Accounting Standards which apply to the accrual basis of accounting except for cash flow and set out recognition, measurement, presentation and discloser requirement dealing with transaction and events in general purpose financial statements.

The financial statements are presented separately each material class of similar items. The financial statements are presented results from processing large number of transactions or other events that aggregated in to classes according to their nature of function.

The financial statements are presented by the Centre has not offset the assets and liabilities or income and expenses unless required or permitted by a standard.

The accounting period under consideration is from 01st of January 2014 to 31st December 2014.

2. Changes in accounting policies

The accounting policies adopted are consistent with those of the previous financial year.

3. Comparative information

The accounting policies applied by the Centre are consistent with those used in the previous year. Previous two year's figures and phrases have been re-arranged, wherever necessary, to conform to the current year's presentation.

4. Going Concern

When preparing financial statements, management has made assessment of all the assets and liabilities of Centre to continue as a going concern, taking into account all available information about the future.

5. Allowance for doubtful debts

The Centre reviews at each balance sheet date all receivables to assess whether an allowance should be recorded in the Income Statement. The management uses judgment in estimating such amounts in the light of the duration of, outstanding and any other Factors that indicate uncertainty in recovery.

6. Valuation of assets and their bases of measurement

6.1 Property, Plant and Equipment

a) Cost and Valuation

Property, plant and equipment are stated at cost or fair value less accumulated depreciation and any accumulated impairment in value.

The carrying values of property plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable. All items of property, plant and equipment are initially recorded at cost.

Where items of property, plant and equipment are subsequently revalued, the entire class of such assets is revalued at fair value. When an asset is revalued, any increase in the carrying amount is credited directly to a revaluation reserve, except to the extent that it reverses a revaluation decrease of the same asset previously recognized in the Income Statement, in which case the increase is recognized in the Income Statement. Any revaluation deficit that offsets a previous surplus in the same asset is directly offset against the surplus in the revaluation reserve and any excess recognized as an expense. Upon disposal, any revaluation reserve relating to the asset sold is transferred to retained earnings. Items of property, plant and equipment are de-recognized upon replacement, disposal or when no future economic benefits are expected from its use. Any gain or loss arising on de-recognition of the asset is included in the Income Statement in the year the asset is de-recognized.

When assets are rehabilitated using the Capital funds individual assets are considered for revaluation at the time of rehabilitation is done.

b) Funding & Depreciation

Funds for acquisition of Fixed Assets are provided by the General Treasury. In determining the gross carrying amount of assets we have considered, the delivered to site value inclusive of FOB, CIF, clearing, transport & other local charges incurred for bringing to the condition at present. Assets are depreciated at the following rates on straight line method.

Asset Category	Depreciation %
Building	2.5
Office Equipment	15
Tools	15
Demonstration items	15
Computers	33 1/3
Vehicle	15
Furniture & Fittings	10
Plant Machinery & Lab Equipment	15
Library Books	5
Infrastructure	15

Soft ware	331/3
Museum Items	
Museum Demonstration Item	15
Museum Furniture Fittings	10
Museum Plant and Machinery's	15
Museum Office Equipment	15
Museum Computer	331/3
Museum Infrastructure	15

6.2 Inventories

Inventories other than produce inventories are valued at the lower of cost and net realizable value after making due allowances for obsolete and slow moving items.

The costs incurred in bringing inventories to its present location and condition, are accounted for as follows:

a) Materials
At actual cost on first-in first-out basis.

b) Work-in- progress
At the cost of direct materials, direct labour and an appropriate proportion of production overheads based on normal operating capacity.

c) Finished goods
At purchase cost and /or cost of direct materials, direct labour and an appropriate proportion of production overheads based on normal operating capacity.

d) Consumables and Spares
At actual cost

6.3 Divinaguma National Program

Ministry of Traditional Industries and small Enterprise Development (MTISED) had advance money to purchase material & equipment to be distributed to trained beneficiaries of Divinaguma Program industrial sector**.** The prior agreed expenses with the MTISED are set off against the advance received.

6.4 Trade and other receivables

Trade and other receivables are stated at the amounts they are estimated to realize, net of allowances for bad and doubtful receivables. Allowances have been made for bad and doubtful debts. Bad debts are written off as and when identified. In calculating fair value cost of capital for 2014 is taken @ 12.29%, where as in year 2013 it was 17%.

Cash and cash equivalents

Cash and cash equivalents in the cash flow statement comprise cash at bank and in hand and short term deposits with a maturity of 3 months or less.

LIABILITIES AND PROVISIONS

Employee Benefit Liabilities

7. Retirement Benefits

Retirement benefits to employees are provided according to the laid down statutory requirements. Institute's contribution for provident fund and employees' Trust Fund is 15% and 3% respectively. Gratuity provision is made according to the Gratuity Act No.12 of 1983 to employees from year one of service in the Centre. The funds required for payment of gratuity is given by Treasury when requires.

Provision is calculated as follows

(Last drawn Basic Salary plus cost of living & other allowances)x ½ x Completed Number of Years.

8. Provision of Research Awards

Awards to Winning Research Engineers

The Members of BoDs. approved to reimburse some of the funds received through awards to the NERDC, among the applicable Research Engineers, as per the following .

a) Reimbursement of 60% of the award money among the Researchers involved in award winning Research Projects. Researchers would be identified as those, who were responsible for the submission of the applications for the awards.
b) Allocated amount is distributed among the team members proportional to the salary as at the date of application closing date.
c) This will apply to past awards and future awards.
d) For the past awards, reimbursement will be done only to the Researchers, who are at service of NERDC at present (but for calculation, all the team members will be considered.)
e) The amount identified for Researchers, who are not presently not employed would be retained along with the 40% of the award money for future activities of NERDC in promoting the research culture.

9. Grants

Grants are recognized when there is reasonable assurance that the grant will be received and all attaching conditions will be complied with. When the recurrent grant relates to an expense item, it is recognized as income over the period necessary to match the grant on a systematic basis to the costs that it is intended to compensate. Where the Capital grant relates to an asset, it is set up as deferred income. Where the Centre receives non-monetary grants, the asset and that grant are recorded at fair value and are released to the Income Statement over the expected useful life of the relevant asset by equal annual installments. Major portion of grants are received from General Treasury.

10. Provisions, contingent assets and contingent liabilities

Provisions are made for all obligations existing as at the Balance Sheet date when it is probable that such an obligation will result in an outflow of resources and a reliable estimate can be made of the quantum of the outflow. All contingent liabilities are disclosed as a note to the financial statements.

11. Creditors

Trade creditors are recognized at the time of receiving goods to the Centre.

INCOME STATEMENT

12. Revenue Recognition

Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Centre, and the revenue and associated costs incurred or to be incurred can be reliably measured. Revenue is measured at the fair value of the consideration received or receivable, net of trade discounts, NBT and value added taxes. The following specific criteria are used for recognition of revenue:

a) Sale of Develop Products

Revenue from the sale of developed products, is recognized when the significant risk and rewards of ownership of the products have passed to the buyer with the Centre retaining neither a continuing managerial involvement to the degree usually associated with ownership, nor an effective control over the products are sold.

b) Rendering of Services

Revenue from rendering of services is recognized in the accounting period in which the services are rendered or performed.

c) Construction Revenue

Construction revenue is recognized by reference to the stage of completion, Projects which are completed more than 75% revenue is recognized as current year income after determined by taking into accounts the labour hours incurred to date as a percentage of total estimated labour hours for each contract. Where the contract outcome cannot be measured reliably, revenue is recognized only to the extent of expenses incurred that are recoverable.

d) Turnover Based Taxes

Turnover based taxes include Value Added Tax, Economic Service Charge, Turnover Tax and Nation Building Tax. Centre Companies in the Centre pay such taxes in accordance with the respective statutes.

e) Interest Income

Interest income is recognized as and when the interest accrues.

f) Gains and Losses on Disposal of Assets

Net gains and losses of a revenue nature arising from the disposal of property, plant and equipment and other non-current assets, are accounted for in the Income Statement, after deducting from the proceeds on disposal, the carrying amount of such assets and the related selling expenses. Gains and losses arising from activities incidental to the main revenue generating activities and those arising from a Centre of similar transactions which are not material, are aggregated, reported and presented on a net basis.

g) Other Income

Other income is comprised with net income of Technology transfer projects which are completed, Interest income on call deposits, Liquidity damages, Bond income, Interest on loans, Non refundable deposits, Registration of Suppliers, Sundry income, Damaged Stock disposal income; Gain on disposal of assets and overhead recovery based on accrual concept

h) Differed Income

Differed income is ascertained from the depreciation of asset purchase out of government funds.
Accounting concepts which are not covered under SLPSASS are prepared according to Sri Lanka Accounting standards.

13. Expenditure and Presentation in Income Statements

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 Centre and depreciation of the property, plant & equipment has been charged to income in calculating the surplus/ (deficit) for the period.

14. Research & Development

Research & Development projects are mainly funded by the Treasury. If Research projects are party funded by a client this income is taken against the expenditure.

When costing the research projects direct cost considered.

09. Financial Positions as at 31.12.2014

Financial Position for the year ended 31.12.2014

Figures in Rs.

	Notes	2014	2013	2012
Assets				
Current Assets				
Cash & Cash Equivalent	1	51,390,019.08	64,272,582.54	16,120,227.81
Trade Receivables	2	10,450,539.37	10,399,225.62	19,123,548.48
Inventories	3	9,417,954.58	10,543,702.66	12,037,248.97
Pre payments	4	573,050.55	213,744.02	200,462.85
Other Current Assets	5	77,216,040.43	68,269,173.58	65,463,949.23
Deposits	6	42,891,829.47	20,121,659.60	47,879,600.98
		191,939,433.48	173,820,088.02	160,825,038.32
Non-current Assets				
Property Plant & Equipment	7	401,809,256.40	427,265,911.73	476,398,023.96
Other Intangible Assets	8	216,400.45	178,320.45	160,400.45
		402,025,656.85	427,444,232.18	476,558,424.41
Total Assets		593,965,090.33	601,264,320.20	637,383,462.73
Liabilities				
Current Liabilities				
Trade & Other payables	9	30,951,827.14	27,452,371.47	31,923,406.75
Total Current Liabilities		30,951,827.14	27,452,371.47	31,923,406.75
Non Current Liabilities				
Provision for Gratuity	10	83,742,063.75	72,788,724.13	67,315,187.85
Deferred Income	11	122,461,854.77	135,432,307.32	167,033,616.20
		206,203,918.52	208,221,031.45	234,348,804.05
Total Liabilities		237,155,745.66	235,673,402.92	266,272,210.80
Total Net Assets		356,809,344.67	365,590,917.28	371,111,251.93
Net assets/Equity				
Capital contributed by the government entities	12	225,713,890.26	214,023,661.96	192,276,714.26
Revaluation Reserve		354,564,874.91	355,653,347.74	354,805,770.31
Accumulated surpluses/(deficits)		(223,469,420.50)	(204,086,092.42)	(175,971,232.64)
Total Net assets/Equity		356,809,344.67	365,590,917.28	371,111,251.93

Dr . T A G Gunasekera		Eng.D.D.Ananda Namal		D.V.S. Perera
Chairman		Director General		Finance Manager

10. Statement of Financial Performances

Statement of Financial Performances for the Year ended 31.12.2014			
			Figures in Rs.
	2014	**2013**	**2012**
Revenue			
Transfers from the government entities	170,708,721.00	161,058,376.34	147,441,000.00
Deferred Income	53,806,701.25	60,555,653.84	55,662,353.59
Other Revenue	24,198,767.53	18,961,950.62	17,632,392.00
Total Revenue	248,714,189.78	240,575,980.80	220,735,745.59
Expenditure			
Administrative cost	195,047,071.38	174,044,410.52	146,499,144.22
Other Expenses	6,896,235.20	15,667,669.44	24,018,904.43
Depreciation	66,067,208.76	78,932,795.42	77,130,594.75
Financial Cost	87,002.52	45,965.20	69,679.83
Total Expenditure	268,097,517.86	268,690,840.58	247,718,323.23
Surplus/(Deficit) for the period	(19,383,328.08)	(28,114,859.78)	(26,982,577.64)

11. Statement of Equity Change

Note **Statement of Change in Equity as at 31.12.2014** **Figures in Rs.**

	Capital Introduced	Government Contributed Capital	Capital from Other sources	Re stated Revaluation surplus	Accumulated Surplus /(Deficit)	Total Net Assets/Equity	Re Stated Balance as at 31.12.2013
Re stated Balance as at 1/1/2012	1,000,000.00	78,107,954.14	119,985,089.87	350,225,917.20	(148,988,655.00)	400,330,306.21	424,057,997.50
Changes in accounting policies						-	
Restated Balances						-	
Changes in equity for 2012						-	
Capital Grant received		48,289,000.00				48,289,000.00	82,257,610.00
Research Grant transferred to Comprehensive Income		(2,625,000.00)				(2,625,000.00)	(10,337,000.00)
Capital Grant Transferred to Diffed Income		(52,480,329.75)				(52,480,329.75)	(64,883,663.18)
Total comprehensive Income					(26,982,577.64)	(26,982,577.64)	(31,246,974.22)
Increase in revaluation reserve				4,579,853.11		4,579,853.11	482,335.71
Balance as at 31/12/2012	1,000,000.00	71,291,624.39	119,985,089.87	354,805,770.31	(175,971,232.64)	371,111,251.93	400,330,305.81
Changes in accounting policies						-	
Restated Balances	1,000,000.00	71,291,624.39	119,985,089.87	354,805,770.31	(175,971,232.64)	371,111,251.93	400,330,305.81
Changes in equity for 2013						-	
Capital Grant received		61,519,669.00				61,519,669.00	48,289,000.00
Research Grant transferred to Comprehensive Income		(10,818,376.34)				(10,818,376.34)	(2,625,000.00)
Capital Grant Transferred to Diffed Income		(28,954,344.96)				(28,954,344.96)	(52,480,329.75)
Total comprehensive Income					(28,114,859.78)	(28,114,859.78)	(26,982,577.64)
Increase in revaluation reserve				847,577.43		847,577.43	4,579,853.11
Balance as at 31/12/2013	1,000,000.00	93,038,572.09	119,985,089.87	355,653,347.74	(204,086,092.42)	365,590,917.28	371,111,251.53
Previous Year adjustments							
Changes in equity for 2014						-	
Capital Grant received		58,716,198.00				58,716,198.00	61,519,669.00
Research Grant transferred to Comprehensive Income		(6,189,721.00)				(6,189,721.00)	(10,818,376.34)
Capital Grant Transferred to Differed Income		(40,836,248.70)				(40,836,248.70)	(28,954,344.96)
Total comprehensive Income					(19,383,328.08)	(19,383,328.08)	(28,114,859.78)
Increase in revaluation reserve				(1,088,472.83)		(1,088,472.83)	847,577.43
Balance as at December 31, 2014 c/f	1,000,000.00	104,728,800.39	119,985,089.87	354,564,874.91	(223,469,420.50)	356,809,344.67	365,590,916.88

12. Cash Flow Statement

Cash Flow Statement For The Year Ended 31st December 2014			
			Figures in Rs.
	2014	**2013**	**2012**
Net cash flows from operating activities			
Surplus/ (deficit) from ordinary activities	(19,383,328.08)	(28,114,859.78)	(26,982,577.64)
Non- cash movements			
Depreciation	66,067,208.76	78,932,795.42	77,130,594.75
Increase in provision for bad debts	(3,662,072.96)	2,649,974.62	(3,636,903.57)
Increase/(decrease) in payables	3,499,455.67	(4,471,035.28)	(5,737,474.90)
Increase /(decrease) in borrowings	(12,970,452.55)	(31,601,308.88)	(3,179,044.06)
Increase/(decrease) in relating to employee costs	10,953,339.62	5,473,536.28	4,598,093.60
(Gains)/losses on sale of property, plant and equipment	261,256.62	(29,882.20)	(10,070.73)
(Increase)/decrease in other current assets	(30,950,595.17)	26,432,982.17	24,859,853.92
Increase in investments due to revaluation	(1,088,472.83)	847,577.43	4,579,853.11
(Increase)/decrease in receivables	3,610,759.21	6,074,348.24	(10,552,099.43)
Net cash flows from operating activities	16,337,098.29	56,194,128.02	61,070,225.05
CASH FLOW FROM INVESTMENT ACTIVITIES			
Purchase of Assets	(40,919,827.70)	(29,819,842.39)	(56,888,407.64)
Proceeds from sales of equipment	9,937.65	31,121.40	10,119.72
Net cash flows from investment activities	(40,909,890.05)	(29,788,720.99)	(56,878,287.92)
CASH FLOW FROM FINANCING ACTIVITIES			
Capital grant	58,716,198.00	61,519,669.00	48,289,000.00
Transferred to Research Income	(6,189,721.00)	(10,818,376.34)	(2,625,000.00)
Transferred to differed income	(40,836,248.70)	(28,954,344.96)	(52,480,329.75)
Net cash flow from financing activities	11,690,228.30	21,746,947.70	(6,816,329.75)
Net increase/(decrease) in cash & cash equivalents	(12,882,563.46)	48,152,354.73	(2,624,392.62)
Cash & cash equivalent at beginning of the period	64,272,582.54	16,120,227.81	18,744,620.43
Cash & cash equivalent at end of the period	51,390,019.08	64,272,582.54	16,120,227.81

13. Notes of the Accounts

Notes to the accounts as at 31/12/2014

Previous Year Adjustments

Figures in Rs.

		2013	2012	Before 2012	Effect to the balance sheet
	Balance buffs	(29,621,794.90)	(24,846,134.27)	(26,169,768.62)	
1.1	In year 2013 project No APH/COM/78/13 has been overstated by Rs.4,500.00,Whereas this amount has to go as a settlement of a creditor	4,5000.00			Creditors balance is reduced.
1.2	In year 2013 project No APH/RES/98/13 has been overstated by Rs.1,200.00, Whereas this amount has to go as a settlement of a creditor	1,200.00			Creditors balance is reduced
1.3	Project No CVL/COM/117/11-Value of work done is adjusted for Engineers certificate.	79,996.06			Debtors Balance is increase by Rs.89,595.59 and output VAT is increase by Rs.9,599.53.Profit for the year is increase by Rs 79,996.06
1.4	Project No CVL/COM/117/11 Retention amount provided in Year 2013 is increase.	8,344.47			Debtors balance is increase by Rs8,344.47
1.5	Project No CVL/COM/117/11 work done is invoiced	94,198.21			Debtors amount is increased
1.6	Cost of fuel is increase by Rs.48,400.00 instead of debiting to the supplier.	48,400.00			Profit for the year should be increase and creditors amount should be reduced
1.7	Expense incurred for project No APH/COM/4/36/14 by	39,181.50			No effect to the balance sheet.

	mistakenly charged to Project No APH/RSW/31/13				
1.8	Depreciation on museum items has not been charge to differed income	230,411.71			Accumulated loss is reduced.
1.9	Duplicated Assets amounting to 198,275 in demonstration items were charge against the Research and Development charges. Initially when transferring to asset difference is charge to R&D		(198,275.00)		Asset value is reduced by Rs.198,275.00
1.10	Differed income on above duplicated items are reversed from differed income	(29,741.25)	(29,741.25)	(2,979.78)	Over provision of depreciation recovery Differed income account is increase.
1.11	Over provision of depreciation	29,741.25	29,741.25	2979.78	Increase in asset value
1.12	In the year 2013 material and labour cost erroneously taken to charge to CVL/pilot/81/13 now transferred to CVL/COM/2/93/14	285,796.64			Working progress is increased
1.13	Reduced in non moving stock provision as these items are been used for assemble a tractor for demonstration	123,979.30			Inventory value is increased
1.14	Cost was over provided in project No RED/COM/99/13	138,642.18			Current Liabilities are reduced
1.15	Over provision of transport in CVL/POP/33/12		5,157.99		Current liabilities will be reduced
1.16	Over provision of Incentive for the year 2013 for Research is written back according to Board decision No 3.2 in Board meeting No 11 of	397,468.72			Current Liabilities is reduced by Rs.397,468.72

	29/12/2014 and provision made for employees who has left their services				
1.17	Salary arrears paid for the period of 2005-2010			(5,259,135.71)	Current Liability is increased
1.18	According to Board meeting No 10 ,26/11/2014 item No 5.3 Negambo Municipal Council outstanding balance of Rs.2,128,637.16 is written off and in the year 2013 bad debts provision of Rs.573,638.87 was written back	573,638.87	(2,128,637.16)		Debtors balance is reduced
1.19	Repair charges of Flue gas analyzer of RED department	(350,312.20)			Current Liability is increased
1.20	Due to the change in asset categories under provision in depreciation Year Amount 2013 156,689.58 2012 (185,310.80) Before 2012 (181,930.11) ---------- (210,551.34)	156,689.58	185,310.80	181,930.11	Net asset value is decreased
1.21	Under provision of Expenditure in CVL/COM/64/13 Income 410,653.50 Expenditure (302,341.82) Net Income 108,311.68	11,820.70			Current Liability is increased
		(28,114,859.78)	(26,982,577.64)	(31,246,974.22)	

2. Deposits kept as securities for Guarantee Bonds

Guarantee is issued to	Bond No/Date	Certificates Pledge as securities	Amount Rs	Bank	Amount Rs
Toyota Lanka (Pvt) Ltd	Bank Guarantee-15/2008-18/12/2014	C/33734579-507908	100,000.00	Boc-Ja-ela	75,000.00
Teaching Hospital Ragama	Bank Guarantee - 8/2014-19/12/2014	928952-76205517	1,000,000.00	Boc-Ja-ela	800,045.71
Department of National Zoological Garden	Bank Guarantee - 9/2014-24/12/2014	928953-76205545 928954-76205556 928966-76222092 928967-76222223 928968-76222254 928969-76222265	1,000,000.00 1,000,000.00 1,000,000.00 1,000,000.00 1,000,000.00 1,000,000.00	Boc-Ja-ela	5,057,142.85

3. Temporary deposits

Funds received as bond Income from NERDC employees who has left the services before completion of the bond is invested in State Institutions Temporary Surplus Trust Fund maintained at Bank of Ceylon on 30 the July 2012 Rs.8,994,089.90 and with dividends & interest it has increase to Rs.11,133,810.68.

Advances received from the customers are secured in the form of temporary call deposits with the bank, until such time it is used for the purpose. Interest earned is shown under other income.

4 . Trade & other Receivables

100% provision is made for debtors which are unrecoverable according to correspondences. In the year 2013 debtors were discounted at 17%

5. Contingent Liabilities

NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANKA

Summary of Disciplinary Inquiries which was Conducting in Coordination with Labour Department/ External Parties

DATE	INCIDENT	ACCUSED	CURRENT SITUATION
06.11.2014	Leaving out NERDC properties dishonestly without proper authorization	Mr. H P S Palitha Paranamana Welder (PL 3) – Grade II AE&PHT Dept.	Formal inquiry to be conducted
13-14.01.2012	Trying to obtain medical claims dishonestly from the NERDC Medical scheme	Mr. K S Ishantha Fernando Motor Mechanic - Grade III DF&CI Dept.	Formal inquiry conducted and all charges against the accused has been proved. Accordingly punishments have been given. As per the instruction given by a letter dated 21.01.2015 by Asst. Labour Commissioner, special Investigation Unit of Labour Dept. following actions were taken by the Mgt. of NERDC 1. Repayment of inquiry charges deducted 2. Repayment of the increment differed as at 01.07.2013 3. Payment of incentive which was not paid in 2013.
17.01.2014	Complaint against the NERDC for not paying - Unutilized Medical leave - Salary areas for promotion at Ja-Ela Labour Office	Complained by Mr. K G N Rathnayake Former Asst. Director (Admin)	Inquired at Labour Office and NERDC has submitted written explanation

09/02/15

HUMAN RESOURCES MANAGER

09 February 2015

6. Vehicle Accident during the year

National Engineering Research and Development Center

Vehicle Accident Report 2014

Vehicle No.	Date of accident	Estimated Cost of Damage(Rs.)	Insurance Agent	Claim Received Date	Claim Value Recoverd (Rs.)	Unrecoverd Amount(Rs)	Un recoverd Amount Settled by
NB-1631	1/29/2014	27,000.00	SLIC	30/12/2014	26,500.00	500.00	Sonalee motores
PD-8992	2/4/2014	1,816,743.00	SLIC	10/6/2014	1,811,050.00	5,693.00	Toyota Lanka
NB-1631	28/8/2014	179,183.20	SLIC	15/9/2014	174,669.60	4,513.60	NERD Rs. 2,256.80 from NERDC and Rs. 2,256.00 from P.P.P. Kumarasiri
NB-1631	17/12/2014	304,784.48	SLIC	Pending	Pending	Pending	Pending
KF-5940	31/12/2014	955,779.38	NITF	Pending	Pending	Pending	Pending

Prepaired By
Management Assistant
Transport Unit

Checked by
Engineer (Maintenance)

Certified by
Manager - HR

7.

a. Assets write off

Asset	Original Cost Rs.	W.D.V Rs.	Remarks
One Laptop Computer HP-com-215,Serial No CNU1360TMP	105,375.00	60,534.97	On 30/11/2013 when taking place in Sahasak Nipaum exhibition this Laptop was severely burnt by an external fire erupted unexpectedly. Written off order is given on board meeting No 3-2014 ,26/3/2014(Photocopy is attached)
Multimedia Projector HITACHI CPX -2510	171,720.00	86,260.23	On 30/11/2013 when taking place in Sahasak Nipaum exhibition this Laptop was severely burnt by an external fire erupted unexpectedly. Written off order is given on board meeting No 3-2014 ,26/3/2014(Photocopy is attached)

7. b Asset taken and return to supplier

One sofa set-Mahogany was received by the Centre on 26/11/2014 under GRN No14GR 1622 for Rs.106,176.00.This Sofa set has been returned to supplier on 26/1/2015.

14.

විගණකාධිපති දෙපාර්තමේන්තුව
கணக்காய்வாளர் தலைமை அதிபதி திணைக்களம்
AUDITOR GENERAL'S DEPARTMENT

මගේ අංකය எனது இல. My No. LS/F/NERD/1/15 මගේ අංකය உமது இல. Your No. දිනය திகதி Date 08 October 2015

The Chairman,
National Engineering Research and Development Centre of Sri Lanka.

Report of the Auditor General on the Financial Statements of the National Engineering Research and Development Centre of Sri Lanka for the year ended 31 December 2014 in terms of Section 14(2)(C) of the Finance Act, No. 38 of 1971.

The audit of financial statements of the National Engineering Research and Development Centre of Sri Lanka for the year ended 31 December 2014 comprising the statement of financial position as at 31 December 2014 and the statement of financial performance, statement of changes in equity and cash flow statement for the year then ended and a summary of significant accounting policies and other explanatory information was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with Section 13 (1) of the Finance Act, No. 38 of 1971 and Sub-section 1 of Section 2 of the State Industrial Corporations Act, No. 49 of 1957 and the Gazette Extraordinary No.124/6 of 14 August 1974. My comments and observations which I consider should be published with the Annual Report of the Centre 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 Centre on 10 June 2015.

1.2 Management's Responsibility for the Financial Statements

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

අංක 306/72, පොල්දූව පාර, බත්තරමුල්ල, ශ්‍රී ලංකාව. . - இல. 306/72, பொல்துவ வீதி, பத்தரமுல்லை, இலங்கை. - No. 306/72, Polduwa Road, Battaramulla, Sri Lanka
+94-11-2887028-34 +94-11-2887223 oaggov@sltnet.lk www.auditorgeneral.gov.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 consistent with International Standards of Supreme Audit Institutions (ISSAI 1000-1810). Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks 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 Centre'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 Centre's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of financial statements. Sub-sections (3) and (4) of Section 13 of the Finance Act, No. 38 of 1971 give discretionary powers to the Auditor General to determine the scope and extent of the audit.

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

1.4 Basis for Qualified Opinion

My opinion is qualified based on the matters described in paragraph 2:2 of this report.

2. Financial Statements

2.1 Qualified Opinion

In my opinion, except 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 National Engineering Research and Development Centre of Sri Lanka as at 31 December 2014 and its financial performance and cash flows for the year then ended in accordance with Sri Lanka Public Sector Accounting Standards.

2.2 Comments on Financial Statements.

2.2.1 Non-compliance with the Sri Lanka Public Sector Accounting Standards

The following Non-compliances with Sri Lanka Public Sector Accounting Standards were observed in audit.

(a) In terms of Sri Lanka Public Sector Accounting Standard 01, assets settled within 12 months after the date of reporting, should be shown as current assets, whereas all other assets should be shown as non-current assets in the statement of financial position. Nevertheless, staff loans amounting to Rs. 17,843,909 granted to the staff of the Centre that should be settled within a period of 01-15 years, had been shown as current assets.

(b) In terms of Sri Lanka Public Sector Accounting Standard 07, Property, Plant and Equipment should be revalued inclusive of the entire class to which the asset belongs. However, the Center had not taken steps to revalue the entire asset class of motor vehicles, and machinery.

(c) In preparing the cash flow statement in accordance with Sri Lanka Public Sector Accounting Standard No. 03, only the cash transactions should be taken into consideration. However, the motor vehicle valued at Rs. 9,500,000 that had been received by the Center as a Government grant, had been shown under the cash flow received from the financial activities by considering receipts of cash, and the same had also been shown under the investment activities as purchases of fixed assets.

2.2.2 Accounting Deficiencies

The following observations are made.

(a) Seven day's call deposits of Rs. 31,400,000 which should have been shown under cash and cash equivalents, had been shown as deposits of more than 03 months under the current assets.

(b) An interest of Rs. 2,139,720 up to the year under review with respect to the sum of Rs. 8,994,089 deposited in the public institutions temporary surplus fund in the year 2010, had been added to the value of the deposit. However, it had been shown as an interest further receivable.

(c) The expense of capital nature amounting to Rs. 4,206,758 incurred on fixing accessories to the CNC Milling machine, had been accounted as an expenditure for repairs.

(d) As test reports had been issued with respect to 85 samples of electric lamps received by the Center during the period from 2009-2011 without issuing invoices, test fees amounting to Rs. 525,506 had not been accounted. Action had not been taken to recover the said amount even by the end of the year under review.

(e) Museum artefacts identifiable as non-depreciable assets, had been depreciated by 15 per cent. The depreciations for the year under review amounted to Rs. 656,261, whereas the accumulated depreciations for the preceding years amounted to Rs. 654,185.

(f) Consumable goods valued at Rs. 2,930,950 had been included in the fixed assets valued at Rs. 1,071,929,562 shown in the statement of financial position as at 31 December 2014.

2.3 Accounts Receivable and Payable

The following observations are made.

(a) The debtor balance of Rs. 2,936,827 comprising 17 trade debtor accounts as at 31 December 2014 included debtors balances amounting to Rs.507, 983 between one year and 3 years old, and debtors balances amounting to Rs.637, 056 older than 9 years.

(b) The trade creditors balance included unsettled balance of Rs.252, 160 older than 6 years and Rs.198, 812 not settled for more than 02 years.

(c) Value added tax amounting to Rs. 29,316,666 that remained receivable to the Centre from the Department of Inland Revenue from 2005 to 2014, and withholding tax amounting to Rs. 239,092 had not been recovered even in the year under review.

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

The following non-compliances with laws, rules, regulations and management decisions were observed.

Reference to Laws, Rules and Regulations	Non-compliance
(a) Section 8(ii) of the Finance Act, No. 38 of 1971, Circular No. PED/25 of 29 June 2004, and the Public Finance Circular No. PF/PE/9 of 27 June 2006.	A sum of Rs. 77,000,000 had been invested in seven day's call deposits at a State bank without approval of the Minister of Finance and the relevant Minister.
(b) Public Finance Circular, No. 438(2) of 13 November 2009.	A comprehensive report including the balance as per the inventory, physical balance, excess and shortage should be presented by physically verifying the fixed assets of the Center. However, only a report including shortage of

		goods and damaged stocks had been presented to the audit in connection with fixed assets costing Rs. 1,071,929,562
	(c) Section 8.9.1(a) of National Procurement Guidelines dated 25 January 2006	Despite sums of Rs. 1,544,880 and Rs. 2,661,878 had been paid by the end of the year under review to a local and a foreign company respectively for repairing the CNC Milling machine at the designing and consultancy services division, a formal agreement had not been signed.
	(d) Section 9:3:1 (a) of the 19th Supplementary to the Procurement Handbook dated 06 September 2010.	Although approval of the Secretary to the Line Ministry should have been obtained for expenses exceeding Rs. 200,000 incurred on the repairs of equipment and motor vehicles, no such approval had been obtained for the repairs of 2 vehicles, for which a sum of Rs. 2,402,660 had been incurred.

2.5 Transactions not Supported by Adequate Authority

The following observations are made.

(a) On a decision taken by the Board of Management, sums of Rs. 9,050,398, and Rs. 7,972,532 had been paid as incentives in the year under review and the years 2012 and 2013 respectively without obtaining the approval of the Department of Management Services.

(b) In accordance with the Management Services Circular, No. 02/2014 of 11 February 2014, approval for the payment of research allowances should be obtained by presenting an inter-research report including the progress of the relevant proposal as per the Action Plan, to the Research Management Committee within 6 months since

the commencement of the research. Nevertheless, research allowances amounting to Rs. 464,126 had been paid to 03 officers of the Center from July 2014 to April 2015 without such an approval.

(c) A sum of Rs. 4,500,000 deposited in the seven day's call deposits had been utilized for granting loans to the staff without obtaining Treasury approval in that connection.

(d) A scheme for granting a loan amounting to Rs. 1,000,000 to the engineers of the Centre for purchasing motor cars at an annual interest of 4.2 per cent had been implemented by utilizing the profit of the commercial projects without Treasury approval. Thus, a sum of Rs. 6,000,000 had been granted to 06 engineers without proper approval, and 04 officers who obtained vehicles duty free concession from the Government, had also obtained those loans.

3. Financial Review

3.1 Financial Results

According to the financial statements presented, the operations of the Centre for the year ended 31 December 2014 had resulted in a deficit of Rs.19, 383,328 as compared with the corresponding deficit of Rs.28, 114,859 for the preceding year. As such, an improvement of the financial result amounting to Rs. 8,731,532 had been observed. The increase in the other income by 27 per cent as compared with the preceding year, and the decrease in the other operating expenses by 56 per cent had mainly contributed to the improvement of the financial result.

4. Operating Review

4.1 Performance

The following observations are made.

(a) According to the Action Plan, it had been planned to incur a sum of Rs. 18,138,000 in the year under review on research and development expenses. However, only a sum of Rs. 8,317,497 representing 3 per cent of the total expenditure of the year had been incurred. Furthermore, research and development expenses had decreased by 29 per cent as compared with the preceding year. Although it is a main duty of the Centre to perform duties relating to the research and development, expenses on the research and development had rapidly decreased over the past few years, and only a small amount from the total expenditure had been incurred on the research and development activities.

(b) The following observations are made in the examination of the performance of various divisions in the year under review with the Action Plan.

(i) Although it had been planned by the designing and consultancy services division to earn an income of Rs. 6,500,000 by completing 120 orders to supply various dye and mould designing services, a sum of Rs. 1,561,000 had been earned by supplying only 48 services by the end of the year under review. The number of orders undertaken had rapidly decreased as the CNC Milling machine being used in this section, had become inoperative.

(ii) Although it had been planned by the aforesaid division to implement a project to design an automatic gem cutting machine in the year under review, the project had not been commenced.

(iii) Despite plans to earn an income of Rs. 3,300,000 by providing consultancy services for the construction of buildings, only an income of Rs. 600,000 had been earned by the end of the year under review.

(iv) Despite plans to earn an income of Rs. 600,000 from the "Flap Gates" Project, the expected income had not been yielded by the project during the year under review.

(v) The project implemented with the objective of introducing the low-cost construction methodology utilizing the technology of the Center to the Government sector, had not yielded the expected results. Although it had been expected to earn an income of Rs. 1,000,000 in the year under review, the expected income had not been earned, but expenses amounting to Rs. 619,051 had been incurred.

(vi) Although it had been expected to earn an income of Rs. 5,500,000 by implementing a commercial project to construct a crematorium in the year under review, the expected income had not been earned as the project had not been implemented.

(vii) Despite plans had been made to provide consultancy services for the construction of library buildings in Hambanthota and Puttalam districts, the projects had not been implemented.

(viii) Instances where expected targets of the technological marketing division had not been achieved by the end of the year under review, were observed. Particulars are as follows.

	Target	Actual Performance
(i)	Earning an income of Rs. 732,000 by issuing 62 technical transfer licenses.	An income of Rs. 139,000 had been earned by issuing only 21 technical transfer licenses.
(ii)	Publication of 17 research papers	Only 2 research papers had been published.
(iii)	Formulation of a policy for intellectual properties	Despite being commenced in the year 2013, preparation had not been completed in the year under review.

(ix) The NERD Center had expected to earn an income of Rs. 1,900,000 by conducting 22 training programs. Nevertheless, only an income of Rs. 868,538 had been earned by conducting 14 programs.

(x) Although it had been planned in the Action plan from the year 2011 to 2014 to implement ISO 9001 certification system at the NERD Center, it had not been implemented even by the end of the year under review.

4.2 Management Inefficiencies

Despite a sewage system had been constructed by the Center and handed over to the Negambo Urban Council, the Urban Council had refused to pay the balance of Rs. 2,128,636 receivable to the NERD Center as the sewage system had not been operational. That amount had been written off from the accounts in the year under review.

4.3 Operating Inefficiencies

The following observations are made.

(a) As the orders received in the preceding years had decreased due to delays in issuing reports to the client institutes, the income earned from the commercial project of the Center to inspect the imported batteries , had rapidly decreased. The income received form this project during the year under review amounted to Rs. 14,918, whereas the battery tester and other equipment purchased at a cost of Rs. 11,949,980 for inspecting the imported batteries, had remained under-utilized.

(b) The Center had been given 83 electric lamps valued at Rs. 1,049,369 in the year 2011 for sample checks. However, the sample tests had not been conducted even by December 2014.

(c) Activities relating to 10 research projects implemented by the Center at a cost aggregating to Rs. 9,071,303 had been completed though, the final reports had not been presented even as at 31 December of the year under review.

(d) The following observations are made in connection with the issue of licenses and vesting of the technology possessed by the Center.

(i) The number of technologies and technological instruments introduced within a period of 5 years from 2010 to 2014 was 19, whereas technology transfers had been provided only for 03 instruments introduced in the years 2010, 2011.

(ii) There had been 898 registered license holders for 49 technological instruments introduced by the Centre, of whom only 83 had renewed the licenses in the year 2014, whereas 299 license holders who had obtained licenses for 30 technological instruments had completely given up renewing licenses.

(iii) Thirty five licensees for reinforced yards and 398 licensees registered for the economical construction of buildings had registered prior to the year 2005. They had not renewed their licenses due to technology had become obsolete, and the NERD had not been able innovate the technology to be in line with the present day.

(e) In terms of Section xiv 83(2) of the Intellectual Property Act, No. 36 of 2003, where a patentee intends at the expiration of the second year from the date of grant of the patent to keep the same in force, he shall twelve months prior to the date of expiration of the second and each succeeding year during the term of the patent, pay the prescribed annual fee and renew the patent. However, 28 patents had not been renewed up to the year 2014. Although 07 applications had been presented since the year 2002 to obtain patent rights with respect to new technological instruments, patent rights had not been obtained even by the end of the year 2014.

4.4 Idle and Under-utilized Assets

The following observations are made.

(a) Ninety five items of Nonmoving stocks valued at Rs. 1,097,383, and 8 items of damaged stocks valued at Rs. 52,104, had remained underutilized for a period of over 14 years.

(b) Machines and equipment purchased at Rs. 45,971,236 for various divisions of the Center had remained idle and underutilized for a period of 3-8 years.

(c) A model house had been constructed at the technology park of the Center in the year 2013 spending a sum of Rs 3,710,425 with a view to examining the actual cost being incurred in constructing a house utilizing the technology of the Center, but action had not been taken to make use of this house.

4.5 Identified Losses

As expenses had exceeded the income in connection with 02 commercial projects implemented by the Center, the Center had incurred a loss of Rs. 609,726.

4.6 Contract Administration

The Center had been awarded the contract for the construction of Nurses Quarters Building of the Polonnaruwa General Hospital by the Ministry of Health at a cost of Rs. 22,520,010. The matters observed in that connection are as follows.

(a) The construction was scheduled to be commenced on 15 March 2011 and completed by 15 July 2011. However, the construction had been completed on 02 February 2013.

(b) The Center had amended the construction design by preparing estimates amounting to Rs. 24,293,400, and construction had been carried out accordingly. As the estimate

so amended, had not been approved by the Technical Evaluation Committee, it had not been possible to sign the agreements.

(c) The Bill No. 07 valued at Rs. 29,450,947 had been presented to the Ministry of Health on 18 January 2013 , and a sum of Rs. 20,274,560 had been received. Although a sum of Rs. 9,176,386 remained receivable from the Ministry of Health , it had not been recovered even by the date of audit on 30 June 2015, and action had not been taken to present the final bill.

The maintenance period had lapsed by 02 February 2014 though, retentions amounting to Rs. 1,214,670 could not be recovered as the defects had not been revamped.

According to the Bill No. 07, there had been extra works valued at Rs 2,984,169 and price fluctuations valued at Rs. 2,047,560, and approval of the Ministry had not been received in that connection.

4.7 Delayed Projects

The following observations are made.

(a) Project for the manufacture of a bakery oven with bio-fuel thermostatic controller

The Project for the manufacture of a bakery oven using bio-fuel commenced on 09 January 2012, was scheduled to be completed by 31 December 2012 with an estimated cost of Rs. 400,000. Completion of the project within the specified duration had failed, and approval for additional provisions totaling Rs. 6,366,000 that represented 16 times of the originally estimated cost, had been obtained in several instances by October 2014. This project had been scheduled to be completed by 31 October 2014. However, the project had not so far been completed despite a sum of Rs. 3,496,796 had been incurred by 31 December 2014.

(b) Project for the manufacture of a Robot

A sum of Rs. 1,132,471 had been given to the University of Moratuwa by entering into a memorandum of understanding for the project commenced with a view to manufacturing a robot. This project commenced in January 2012 had been scheduled to be completed by January 2013. However, the project had been completed by December 2013, but the robot had not functioned as expected.

4.8 Inoperative Projects

No progress had been observed in connection with 07 research projects with an estimated cost of Rs. 6,785,000 that had been scheduled to be commenced and completed within the year under review. The objectives of the projects could not be achieved as the projects had not been completed on time, whereas duration of some projects had exceeded, and even the project periods had not been extended.

4.9 Personnel Administration

The following observations are made.

(a) The cadre approved by the Department of Management Services was 311. There had been 65 vacancies in the executive and non-executive grades , and 15 excesses in the executive grades by 31 December 2014.

(b) Instances of employees recruited on contract basis contrary to the scheme of recruitment, had been observed.

(i) Although an experience of 15 years is required by the scheme of recruitment for the post of Director (Human Resources), a female officer who had not possessed such an experience had been recruited as Manager (Human Resources) - a title not in the approved scheme of recruitment, for a period of 01 year with effect from 01 August 2014.

(ii) An employee had been recruited for the post of Machine Operator on contract basis contrary to the scheme of recruitment, and a monthly allowance amounting to Rs. 22,971 had been paid since May 2014. Five employees who had not possessed a 01 year experience had been recruited contrary to the scheme of recruitment, and sums of Rs. 170,626, and Rs. 283,723 had been paid as monthly allowances and contributions to the provident fund in the year 2013 and the year under review respectively .

(iii) A sum of Rs. 167,358 had been paid as allowances and EPF in the year under review by recruiting an employee on contract basis in excess of the approved cadre for a period of 01 year with effect from 19 June 2014.

5. Systems and Controls

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

(a) Costing and Management of Projects
(b) Debtors
(c) Motor Vehicles Control

W.P.C. Wickramaratne
Acting Auditor General.

Observation of the Members of Board of Directors with regard to the Report of the Auditor General on the Financial Statement of the National Engineering Research and Development Centre of Sri Lanka for the year ended 31st December 2014 in terms of Section 14(2)(c) of the Finance Act, No. 38 of 1971.

2.2. Comments on Financial Statements

2.2.1 Non Compliance to the Public Sector Accounting Standards

(a) This will be corrected in next year statement.

(b) In the next year motor vehicle, plant and machineries will be revalued.

(c) By an oversight Government grant given as Motor Vehicle for Rs.9,500,000 has been recorded as a cash receipt & payment. This has to be corrected as follows.

Purchase of Assets	-	Rs.35,725,062.07
Capital Grant	-	Rs.49,216,198.00

2.2.2 Accounts Deficiencies

(a) In future years this will be shown under cash & cash equivalent.

(b) In next year this will be corrected.

(c) CNC milling machine has been repaired and when we are doing the revaluation this will be considered.

(d) This shall be corrected as, during the time period 2009 – 2011, NERDC has received 56 samples and the payment shall be is Rs. 319,861.95. We will take action to enter this to our accounts. We have already informed SLSI to settle this at their earliest.

(e) Although these items were kept at the museum these are not museum items having historical value. Therefore depreciation is done.

(f) These figures are extracted from a list been prepared by a committee as working papers. Still the committee has not completed the task. In 2015 December when receiving the committee report action will be taken.

2.3 Account receivables & payables

(a) BOI has informed that an action will be taken to resolve the due payment of Rs.637,056. Actions are being taken to recover other dues.

(b) This money has to be paid to M/s Muttaiya & Sons. This payment has been referred to an arbitrator and with the decision this will be paid.

(c) We have been continuously informing about this to the Department of Inland Revenue and we have informed the General Treasury, too.

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

(a) We deposit cash in 7 day call deposits to be utilized in day to day expenditure. This is a temporary deposit. Above stated Rs.77,000,000 is accumulated deposits made during the year. In a given time we maintain a very small amount. Action will be taken to obtain Treasury approval.

(b) Centers assets are being verified by a verification team. Their report shows only the excess, losses and damage items only, but in inventory records are available. A report as per the above will be prepared and forwarded.

(c) First , the repairs for CNC milling machine were done by a local company(Attotech Pvt Ltd), who is the agent for SIEMENS components. Those repairs were done time to time with a service order with the said company.

Further , there were some problems associated to the CNC control unit which could not be attended by local company and we asked the help of the machine manufacturers agent for Asia DMG India Pvt Ltd. This problem was a critical problem and they have to come here several time to inspect the machine and do the necessary repairs and replaced the damaged electronic units.

All these repairs were carried out by the local agent and DMG India Pvt Ltd. were done with the direct service agreement with them. Here, our contract agreement was the service order.

(d) According amendment to procurement manual dated 6th September 2010 19.9:3.1 line Ministries, Secretary approval has to be obtained for direct procurement of repair of vehicle for which value exceeds to 200,000 LKR.

After the accident of PD -8992 & KF5940 repairs have been done from the relevant company and these expenditure were paid by insurance company as follows.

PD 8992	-	Rs.1,811,050.08
KF5940	-	Rs. 549,423.69

Accordingly Centre has not incurred any expenditure therefore the line Ministry approval is not necessary.

2.5 Transactions without covered sufficient authority

(a) This incentive scheme was implemented as per the Public Finance Circular 380 (PF-380) dated 2000.01.19. According to the circular, after deducting the direct cost incurred for the income generating activities such as consultancy services, research, training programmes conducted, etc., the 65%-85% of the balance amount can be utilized for paying the incentive payments for the employees who are directly and indirectly involved for above activities; can be utilized for paying the incentive payment for the employees. For this scheme, approval from the Department of Management Services is not required.

(b) The progress report for relevant research project was submitted after 6 months to the Research Management Committee. The Chairperson of the committee, then Secretary to the Ministry of Technology and Research instructed verbally to pay the allowance until the written approval is sent. Accordingly, the payment was continued, by now the approval has been obtained.

(c) Advances received for projects are deposited in 7 day call deposits. These are kept for a small period of time. Receiving and utilizing is a recurring incident and at a given time funds are available in 7 day calls.

With the approval of the Board of Directors a sum of Rs.4,500,000 has been used for payment of employee loan without a delay. Since loan installment are received every month, the work handle using these advances are done without any interruption. However action will be taken to get the Treasury approval in future.

(d) Executives in the Centre receive the Motor Vehicle loan from year 1991. At the beginning Rs.150,000.00 was given and time to time this has increased. Currently we facilitate Rs.1,000,000 under the approval of the board.

For this treasury funds are not utilized. However in the future action will be taken to obtain Treasury approval.

3. Financial Review

3.1 Financial Results

4. Operational Review

4.1 Performance

The following observations were made.

(a) The expenditure mentioned here is the amounts spent from direct expenses allocated for research under Code No. 2106. But for research and development projects the employee's salary, electricity, water, general expenses and popularization expenses are included in addition to the above. Accordingly, the R&D expenditure was 45% of total annual expenditure.

Direct expenditure (under Code 2106)	=	8,317,497
44 Expenses for salary & other allowances for research	=	70,654,522
General expenses for research	=	71,703,169
Expenses for popularization of research	=	16,784,329
Total expenditure for research and development	=	122,328,294
Annual expenditure	=	274,051,114
% of research and development expenditure	=	45%

(b) (i) The main reason for the rapid decrease in orders for DFCI department this year , was due to the breakdown of their main machine , CNC Milling , which require for almost all operations in Mould manufacturing. There were no specialists to repair this machine locally and we had to get the service from DMG India for most of the time, and this machine had multiple problems. We had to limit the services of DFCI due to break down of this machine.

These machines were received under ADB project to develop Science and technology in Sri Lanka . DFCI has provided sizable services to local manufacturing industry and the development of science and technology in the area.

(ii) As per the discussion had with the Gem and Jewelry Authority , we were informed that if we can develop an automated gem cutting machine it would be very useful for the people in the gem industry. Accordingly we included that in our activity plan prepared for the year 2014.

However the main stakeholder of this project , Jem and Jewelry Authority was not keen on carrying this project forward. Hence we did not start this project as we were not sure of the potential of the end users to use this machine in their industry. We have not incurred any cost on this project.

(iii) Though we had planned to earn Rs.3,300,000.00 by building consultancy work, It was not received expected orders for building consultancy work. There were various reasons for not receiving orders such as economic situation of the country and willingness of customers to have a cost effective technology for their buildings. Therefore, it was not received expected income as we planned.

(iv) Three flap gates were started as expected during the year 2014. However, delay in receiving orders and bad weather (heavy rain) caused the projects extended to 2015.

(v) The purpose of this project was popularizing of cost effective technology throughout the country via the all provinces. This project was a collaboration project with the parties of Finance Commission, 09 provinces in Sri Lanka and NERD Centre.

In the beginning of this collaboration project Training programmes, building estimation and designs had been done by NERD Centre and those documents were handed over to 09 provinces in Sri Lanka to construct their buildings by themselves. However, expected progress had not been reached by each provincial due to lack of money allocation and problematic situation of tendering of contracts. However, 60 Million worth projects had been started by Western Province with the consultancy of NERD Centre.

(vi) Pollonnaruwa Divisional Secretariat was expecting to construct a crematorium in 2014. However, as their allocations delayed, the project was postponed to 2015. At the moment the crematorium is in under construction.

(vii) Above project had been coordinated by Precedential Secretariat Office. At the beginning of this project Precedent Secretariat Officers expected to have consultancy services from NERD Centre. However, construction of library buildings had been done by Civil Defense Force without any problem and therefore Precedential Secretariat Officials had not requested our consultancy services.

(viii) (i) Only few requests received to obtain the Technology Transfer licenses, even though the considerable Number of relevant workshops were conducted.

(ii) Published 12 Nos. of Research Papers.

(iii) Final draft of a policy of intellectual property had been completed at the time of audit but now everything has been completed.

(ix) Techno Marketing Department has earned Rs.868,538.00 by conducting of 14 Nos. of training programs. It was unable to achieve the expected target of Rs.1,900,000.00 with the 22 trainings since the problem of finding out suitable participants for the relevant trainings even though taking of great effort with the resources available in the Techno Marketing Department.

(x) The ISO 9000 quality system has been almost established and the obtaining of the certificate is underway.

4.2 Inefficiencies of the Management

The main reason to fail this project was sufficient quantity of recommended sewerage had not received continually to the site. However, the plant was successfully operated during the period of sewerage received.

Even though the number of discussions made with the Municipal Council and the related officers to overcome this issue, a convenient solution could not obtained. Further the number of requests (by written) and discussions were made in order to receive the balance amount based on the agreements. Then this issue was discussed with the director board, since the NERDC could not come to the final decision with the Municipal Council. The Director Board decision was to "write off" this due payment since the NERDC has received the expenses incurred for this project.

Accordingly, NERDC Director Board decided to "write off" this due payment on 26th November 2014, since the total expenses of this project could be recovered by the advance payments received.

4.3 Operational Inefficiencies

(a) At the initial stage providing test report to the customer were got delayed, not due to inefficiency, but due to receiving samples were much more than what we can tested . After 2009, we have provided test reports without any delay.

The number of orders have been reduced, as our main customer; Sri Lanka Standard Institution (SLSI) has introduced some other method of inspection. (implemented a new scheme of certification method by inspecting the Battery manufacturing factories) and getting tested by other institute.

Income of said year shell be corrected as Rs.49,300.00. Excepts the Batty tester, the other instruments have not been purchased only for batty testing and the same time, all those instruments are used for some other work in the department and they are not underutilized.

(b) We do lamp testing only after the payments. The samples indicated were not tested as the customer had not been done the payments. By this year (2015). We have received the payments for the work order No. 905, 910. The testing will be carryout according to the first come first serve basis.

(c) Two number of final project reports have presently been completed and the other reports are in progress.

(d) (i) During the period of aforesaid (2010 – 2014), our institute has introduced 10 Nos. of new technologies and one technology was already transferred. Action will be taken to transfer the other technologies in the near future.

(ii) There were considerable demand for the above 30 Nos. of technologies at the time of introducing those technologies . But, similar types of imported goods / equipment have come to the local market at very low selling price and therefore they are in difficult to sell these products. Therefore, they stopped the manufacturing of these products and renewal of relevant licenses issued by the NERDC.

(iii) Prior to year 2005, we have granted licenses to all participants who successfully completed our 4 days training program on cost effective building construction technology. But, majority of them had not actively started construction work and therefore they have not renewed their licenses.

(e) The Centre has taken a decision to renew the patents for the technologies which are in active stage at present. Accordingly, a decision has taken to renew the patent only for 02 Nos. of technologies out of 28 technologies. There are possibilities to renew other patents (availability of market potential for the particular technology) by paying of arrears, up to 20 years after the year of first patent right obtained. Otherwise, it has to be make high payment for renewing of above 28 all technology patents. Hence, we have renewed only 02 patents in 2014.

Even we submitted patent applications Nos. 12693,12791,12792, 12847, 13113 to the patent office, they have requested to send some amendments in description, claims, etc. Accordingly, 05 amended applications were already sent to the patent office and awaiting their reply for the same.

Amendments for the patent Nos. 16068 and 16328 will have to be submitted.

4.4 Idle and Underutilized Assets

(a) Out of 95 Nos. of stock items of value Rs.1,097,383, stock items of value Rs.394,161.81 have been disposed by 20th June 2015. Action are being taken to dispose stock items of value Rs.545,350. For other stock items disposal method is being developed and these will be disposed.

(b) Some of the equipment, even though they are not continuously used, were used for different services as and when required. Some testing equipment was used only for particular tests, but those are essential equipment in a manufacturing facility. Further, some of these testing equipment were used for very small time period and the times taken were not properly recorded. Hence, the statement that these machinery were underutilized was not appropriate.

(c) This house had been constructed to identify actual construction cost to make a cost effective house by outside person and to exhibit new construction technologies introduced after year 2002.

This model house had been often used to popularize the cost effective technologies for public who are living in North- East Provinces and the others who came to take knowledge about this technology. In additionally photographs and banners were prepared about all necessary and important technologies of the model house and, published and displayed in different places at the entire country. Similarly, this model house was used for different occasions and for different application in various purposes at the NERD Centre.

4.5 Identify Defects

The two projects mentioned here are Construction of Proposed Nurses Quarters for Polonnaruwa Hospital (N/CVL/COM/86/2011) and Flap gated (5'x6') lifting mechanism and concrete housing structure (RED/COM/106/2013)

N/CVL/COM/86/2011
It is not correct to identify this as a loss project as the Final Bill of this project is not yet being paid by the Ministry of Health.

RED/COM/106/2013
The transport cost of Rs.14,820/-, travelling to Matara on 22/07/2014 should have been credited to N/R/C/11/133/2014; instead it had been credited to N/R/C/11/106/2013 and steps taken to correct it.

The estimated project value of Rs.227,000/- is within the limit after making this correction.

4.6 Contract Management

(a) The NERD Centre is not a construction Organization. The main objective of NERDC is to involve in Research and Development activities. With the aim of popularizing the NERDC developed technologies, NERDC involves in few states owned constructions. However, humble request from Ministry of Health this construction was undertaken by NERDC.

Following are the main reasons of the construction delay.

- Introduction of new plan with high aesthetic appearance instead of old plan
- Due to complex nature of the new plan, it took more time.
- Unexpected time involved in finding suitable soil to manufacture cement soil block with new technology and cooling effect.
- Resign of the Site Engineer recruited to the site and inability to find new engineer due to poor salary scale.
- Problem due to heavy rains and floods during the construction period.
- As the result of drought in other parts of the country, interruption of the power supply.
- Difficulties in finding river sand for concreting due to heavy rain.

As above facts are true and reasonable, Ministry of Health has approved the requested time extension without any conditions.

(b) In order to popularize the NERDC technology further, the Board of Directors instructed to submit new plan with high aesthetic appearance compared to the original plan.

This new plan was approved by the Ministry of Health by 22.03.2011. In awarding contracts awarded to Government Organizations the rates are approved by the Standard Technical Evaluation Committee under the Ministry of Housing Construction, Engineering Services and Common Amenities.

Written instructions were given to proceed with the construction work until the approvals of rates are given and bills are paid up to 90% of the work done.

(c) In considering the requested amount of the Rs.29,450,947.00 and paid amount of Rs. 20,274,560.00 it is understanding that work done under BOQ is paid subjected to checking. After obtaining the approval for extra works and price escalations from the Standing Technical Committee of Ministry of Housing Construction, Engineering Services and Common Amenities, the Final Bill will be submitted and extra works, variations, price escalations are claimed.

The Defect Liability Period is over by 02.02.2014. But retention money could not be claimed as defects are not fully rectified.

At the end of the Defects Liability Period on 02.02.2014, a written request is made to the Ministry of Health to release the retention. But, in addition to the rectified defects the water leak from the upper floor bathroom is not stopped. This was informed to us by the Medical Superintendent by his letter dated 18.03.2014.

As the Final Bill is not paid we requested to release 50% of retention to rectify the defects by our letter dated 03.07.2014.

However, NERDC has how rectified the water leak in upper floor bathroom and requested to release the retention.

According to Bill No. 07 extra work of Rs.2,984,169.00 and Price Fluctuation of Rs.2,047,560.00 are not approved by Ministry of Housing Construction, Engineering Services and Common Amenities.

The approval for the extra work and price fluctuation is not yet received and it is given by the Ministry of Housing Construction, Engineering Services and Common Amenities. We have submitted all necessary documents for this approval.

4.7 Delayed Project

(a) This is a nationally important project and the objective of original research is to develop and introduce a temperature controllable biomass fuelled (freely available fuels such as “gliricedia”) bakery oven, which could be an alternative for fossil fuelled bakery ovens and traditional fire wood bakery ovens as well.

R & D projects of this nature involves many technological steps and methodologies(trial and error methods) before finalizing the end product to the expected level. Further, conducting field trials is an essential activity for projects of this nature. Due to these reasons, this project consumed an unexpected time to achieve expected progress. However, the reason for getting the approval for Rs. 6.366 million is that, though the approved funds for one year could not spent fully, it was happened to get approved another money for the next year.

Though the apparent expenditure for the project is Rs.3,496,796/- , the true expenditure is only Rs. 1,792,477/- after deduction of staff salary and recurrent expenditure. However, nearly 80% of this project has been completed and expected to complete within this year.

(b) This was a project undertaken in collaboration with the University of Moratuwa with a MOU to Design and Develop Demining Robot and a sum of Rs.1,132,471 was paid to University of Moratuwa. This project was started in the year 2012, January and to be completed in the year 2013 January . However this was completed in the year 2013 December but it was not functioning as expected.

This project was a joint project with NERDC and UOM . This Demining Robot was completed, fabricated in 2013 May, and the field testing was done in connection with the Sri Lanka Army.

After the field trials, it was decided to carry out identified modifications by the NERDC and UOM. At the moment the modifications are being done in UOM and this project is not unsuccessful.

4.8 Inactive Project

Optimization of NERD Slab (CVL/RES/47/2014)

The first test result was incorrect due to the poor quality of used cement. After understanding of the defects situation the test was repeated. Therefore the project was not completed on time. Then the test was successfully completed by using good quality cement and last progress report is preparing.

Anaerobic Digestion (RED/RES/48/2014)

This project was undertaken to produce electricity using biogas jointly with solid waste management authority (W.P.) This project was extended up to 30.09.2015. as it was delayed due to following reasons.

- Unavailability of feed material
- Not receiving labourers from solid waste management authority for operation (as per the agreement)
- Breakdown of the gas generator unexpectedly

However, the generator was repaired and the testing completed in 2015.

Flue gas cleaning system (RED/RES/49/2014)

This project was supposed to implement for Kurunegala Urban Council. However, as the crematorium building was not completed by Kurunegala Urban Council the project was delayed. The design stage of flue gas cleaning system is completed.

Flap gates to mitigate floods (RED/RES/50/2014)

The project was extended to 31.12.2015, 30% was completed by 31.01.2015. The funding for the concrete structure for flood controlling flap gate was not received from agrarian services department in time. The estimate for concrete structure has to be resubmitted, causing a delay.

Fuel wood chips for boiler based tea drying system (RED/RES/51/2014)
Suitable tea factory was selected to implement this system However, the factory owner showed less interest later on. Therefore implementation was not started.

Processing solution for wound treatment (E&EM/RES/77/2014)
This is a continuing project. The reason for slow progress of this project is the nature of the project type and achieved progress is nearly 19%. The expected date of completion of the project is31/12/2015. The main reason for the delay is the difficulty of getting support of doctors as planned. Instructions have been given to overcome the difficulties.

Gem Cutting Machine (DF&CI/RES/78/2014)
As a result of a discussion had with the Gem and jewelry Authority , we were informed that if we can develop an automated gem cutting machine it would be very useful for the people in the gem industry. Accordingly we included that in our activity plan prepared for the year 2014.

However the main stakeholder of this project , Jem and Jewelary authority was not keen on carrying this project forward. Hence, we did not start this project as we were not sure of the potential of the end users to use this machine in their industry. We have not incurred any cost on this project.

4.9 Staff Administration

(a) Out of this 65 vacancies 37 vacancies are in technical categories such as Engineering, Technical Assistants and Draftsman etc. There were 06 vacancies for the post of Master Craftsman which is only for internal applicants. But there were no qualified internal applicants for these posts so far.

Although applications had been called for filling the vacancies in Management Assistants, recruitments were not done due to Presidential Election.

However 13 vacancies in Engineering and Technical categories and Management Assistant vacancies have been filled by now. Other vacancies will be filled as per the requirements of the Centre.

It is noted that there were no 15 number of excess staff in executive posts and only 03 officers in the post of Finance Manager, Supplies Officer and Marketing officer in Manager Category was absorbed to these posts as personal to them.

(b) (i) The officer who worked as the Director (HR) reigned with effect from 02.05.2014 and the officer in Assistant Director (Administration) also resigned with effect from 30.11.2013. By that time the post Assistant Director (Administration) was held by an officer who was newly recruited on 01.01.2014. Accordingly there were serious issues in performing the functions of HR Department properly.

Under these circumstances, it was required to recruit qualified and experienced personnel for the post of Director (HR) immediately to perform the HR Department's functions effectively.

Accordingly, advertisement on calling applications was published on Sunday Observer newspaper on 04/05/2014 and three applications received. All were called for the interview but only one applicant appeared for the interview.

Although, the post of Director (HR) requires 15 years of experience as per SOR approved, the applicant who appeared for the interview had completed only 14 years of experience after obtaining the first degree and the said applicant was already holding a post as Manager HR in Senior Manager (HM) category in a State Company and possessed required other educational and professional qualifications.

Considering above situation, it was decided to recruit said applicant as the Manager HR on contract basis and placed her at a salary bellow two steps from the initial step of the salary scale of HM 1-3 with all other government approved allowances. Further, after completion of the required no. of experience, it was decided to made her permanent as the Director (HR). The decision was approved by the Board of Directors on 18.06.2014.

Further it was noted that there were difficulties in recruiting qualified personnel for this post and the Centre was unable to retain them for a longer period.

Accordingly this officer was recruited with effect from 01.08.2014. Since she had completed 14 years of experience after obtaining first degree to the date of 01.08.2014, salary was calculated as follows;

Salary Scale relevant to the post of Director (HR) - HM 1-3 (41745-15x1100-58245)		
Initial step of the Salary Scale	-	41,745.00
One increment below the initial step (41745-1100)	-	40,645.00
Cost of living allowance	-	7,800.00
15% allowance of the Basic Salary	-	6,096.75
5% increase of the Basic Salary	-	2,032.25
Total	**-**	**56,574.00**

Accordingly monthly salary paid from 01.08.2014 to 31.10.2014 - Rs. 56,574. 00
EPF, ETF has been paid as per the provisions of EPF and ETF Acts.

As per the previous Scheme of Recruitment before the DMS 30 was introduced, the post Director HR was designated as Manager (Personnel & Administration).

As this officer had been holding the post of Manager (HR) in Senior Manager (HM) Category in a State Company and not completing 15 no. of experience, she was recruited as Manager (HR) on contract basis until completion of required no. of experience. Since she has completed the required experience, the post of Director (HR) on permanent basis was awarded.

(ii) Considering the service requirement in the Department of DFCI, a trainee for operating CNC machines and mould making had been recruited for a period of two years from 02.04.2012 to 01.04.2014. Within the training period he was paid daily payment of 250/- up to 31.08.2012 and Rs.500/- of daily payment from 01.09.2012.

Considering a vacancy in the post of Machinist also the service requirement of the DFCI Department and extra ordinary performance of the said trainee, an interview was held on 03.04.2014.

Although, the required educational qualifications had been fulfilled by this trainee, professional qualification of NVQ level 4 in the relevant field was not acquired. Therefore, he was recruited on contract basis for a period of 6 months from 06.05.2014 to 05.11.2014. A monthly allowance of him was paid from the income generated by the Departmental Commercial projects.

Computation of salary paid is as follows;

Salary scale relevant to the post of Machinist - PL 3 12670(10x130-10x145-10x160-12x170) 19060

Initial step of the salary scale	-	12,670.00
Salary step below one increment value (12670-130) (For not having NVQ Level 04 qualification)	-	12,540.00
Cost of living Allowance	-	7,800.00
15% allowance of Basic Salary	-	1,881.00
5% increase of Basic Salary	-	750.00
Total	**-**	**22,971.00**

As per the EPF, ETF provisions, EPF and ETF had been paid.

Five (05) post in Management Assistant - Non Tech (Testing Services) were approved by the Department of Management Services on 31.01.2013. This post requires 01 year of training/experience in the relevant field in addition to the required educational qualifications.

In order to recruit personnel with one year experience/training in our laboratories for a period of one year on contract basis, advertisement was made to recruit four personnel. Out of applications received, applicants who had required educational qualifications were selected and recruited on contract basis for a period of one year with the approval of Board of Directors on 20.03.2013.

Accordingly the salary has been computed as follows;

Salary Scale relevant to the post - MA 1- 2 Rs. 13450 (10x145-7x170-12x290-12x345)23710		
Initial step of the Salary Scale	-	13,450.00
One increment below the initial step (13,450-145)	-	13,305.00
Cost of living allowance	-	7,600.00
15% allowance of the Basic Salary	-	1,995.75
Total	**-**	**21,900.00**

Accordingly relevant officers had been paid Rs. 21,000 of monthly allowance.

EPF, ETF has been paid as per the provisions of EPF and ETF Acts.

After completion of relevant experience, the said officers were recruited on permanent basis based on the results of written test and structured interview. The approval of the Board of Directors has been received for this on 18.06.2014. Accordingly they were placed at the initial salary step of the MA 1-2 salary scale.

(iii) A request to the DMS was made to increase one cadre position of Management Assistant (Non Tech) for newly established Engineering Museum in Technology Park of the Centre. Until receiving this approval a NAITA trainee who had been training in the Centre for a one year period was recruited on contract basis as she possessed required qualifications and experience.

5. Systems and Control

These facts will be forwarded Centres' attention and actions will be taken in future.

Eng. D D Ananda Namal
Director General

Dr. T A G Gunesekara
Chairman