NATIONAL ENGINEERING RESEARCH AND DEVELOPMENT CENTRE OF SRI LANKA

ACKNOWLEDGEMENT

The management expresses and places on record its appreciation to 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.

D R Pullaperuma
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.

V I S I O N

"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."

M I S S I O N

"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 endeavour.
- 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 R Pullaperuma	Chairman	NERD Centre 2P/17B, Industrial Estate Ekala, Ja-Ela	BSc Eng, C Eng., FIE(SL), FIET MBA(Utility Management), Ireland
Eng. Parakrama Jayasinghe	Member	Director Geotech (Pvt.) Ltd., 13/1, Pepiliyana, Mawatha, Kohuwala, Nugegoda	BSc Eng Hons, University of Peradeniya, FRMIT (Australia), FIE (SL), C Eng, P E
Dr A M Mubarak	Member	Director/CEO Industrial Technology Institute No.363, Bauddhaloka Mawatha Colombo 07	BSc (Chemistry) Hons, University of Colombo, PhD (Cantab), Fellow of Institute of Chemistry, Fellow of National Academy of Sciences
Mr H A D U G Gunasekara	Member	Director/Managing Director Union Chemicals Lanka Plc, 4th Floor, Sarathi Building, No.50, Hide Park, Corner, Colombo 02	MBA, LLM, LLB, FIIE(Sc), FMS(UK), Dip on Polymer Technology, Attorney-at-law
Dr Rohan Munasinghe	Member	Director/Snr. Lecturer University of Moratuwa	PhD (Saga), C Eng, MIEFE
Mr G S J Dissanayake	Member	Presidential, Coordinator, Director Presidential Secretariat Office, Colombo. NERDC, Ekala, Ja-Ela	GCGI (UK)
Mr Asanga Dayaratne	Member	Additional Director General Department of Management Services Ministry of Finance Planning General Treasury Colombo 01	MA (Economics) South Korea, BA Hons
Mr D.D.Ananda Namal	Board Secretary	Director General/ C.E.O, NERD Centre 2P/17B, Industrial Estate Ekala, Ja-Ela	MEng (Energy Technology), BSc Eng Hons, C Eng, MIE (SL)

OFFICE ADDRESS

2P/17 B, Industrial Estate
Ekala
Ja-Ela

Postal Code : 11380

CONTACT INFORMATION

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Fax : **+ 94-011-2233153**

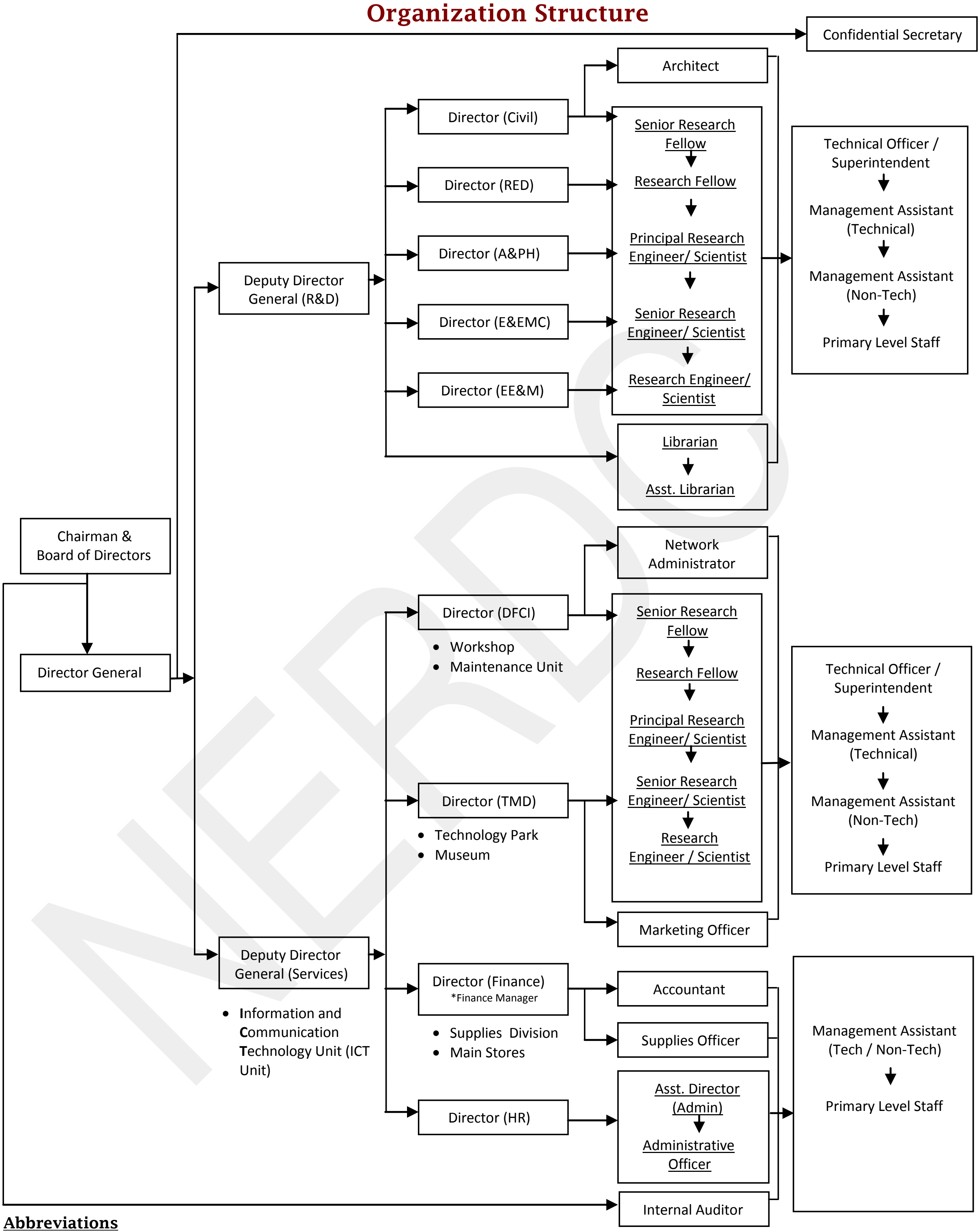
BANKERS

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

AUDITOR

Auditor General

National Engineering Research and Development Centre of Sri Lanka
Organization Structure



Abbreviations

R&D	-	Research & Development
RED	-	Renewable Energy Department
A&PHT	-	Agriculture Engineering & Post Harvest Technology Development
E&EMC	-	Energy & Environmental Management Centre
EE&M	-	Electrical, Electronics & Mechatronics Development
DF&CI	-	Design Fabrication & Consultancy for Industries Development
TMD	-	Techno Marketing Department
HR	-	Human Resources

03. Top Management and Executive Staff

CHAIRMAN

Eng Ranjith Pullaperuma - MBA (Utility Management-Ireland), BSc Eng, C Eng, FIE (SL), FIET

DIRECTOR GENERAL

Eng D D A 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, 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)	**Head, Energy & Environmental Management**	
	Mr J A A D Jayasuriya	M Eng, BSc Eng
	Principal Research Engineer	
	Eng K T Jayasinghe	M Eng, BSc Eng
	Research Engineers	
	Ms N P T Perera	MSc, BSc Eng
	Mr L L Lalith Kumara	MSc Eng, BSc Eng
	Mrs N S Gamage	BSc Eng – From 07.04.2011
	Mr M D Sahardeen	BSc Eng - From 02.05.2011
	Senior Research Scientist	
	Mrs P M G Pathiraja	MSc (Environmental Science & Technology), BSc (Special)

Civil Engineering Department	**Actg. Director (Technical)**	
	Eng Mrs J A C Chrishanthi	BSc Eng, C Eng, MIE(SL)
	Director (Technical)	
	Eng Mrs J A C Chrishanthi	BSc Eng, C Eng, MIE(SL) From 01.07.2011
	Principal Research Engineers	
	Eng W P R D Weerasinghe	NDT, CEI Part I, IESL Part I
	Eng W W P K Perera	M Eng(Struct), BSc Eng Hons,Eng, MIE(SL)
	Research Engineers	
	Mr D T S U Dissanayake	BSc Eng - From 10.03.2011 up to 26.09.2011
	Architect	
	Mr C A U Dalpathado	BSc (BE) Hons, MSc(Arch), AIA (SL), Chartered Architect

Renewable Energy Department (RED)	**Director (Technical)** Eng N K Edirisinghe **Principal Research Engineers** Mr D M Punchibanda Dr M Narayana **Research Engineers** Mrs R M D S Gunarathne Mr S G J U Samarasinghe Ms N P Kumarasinghe Ms L M S D Perera	 BSc Eng BSc Eng. PhD ,MPhil, BSc Eng, upto 11.12.2011 BSc Eng EC(UK) Part I & II, N.D.T. From 01.03.2011 BSc Eng-From-10.03.2011 BSc Eng-From 10.03.2011

Agriculture Engineering & Post Harvest Technology Department (AE & PHT)	**Head, Agriculture & Post Harvest Technology** Dr T B Adhikarinayake **Actg.Director (Technical)** Mr K Y H D Shantha **Research Fellow** Eng W K R Peiris **Principal Research Engineer** Mrs Y M M K Ranathunga **Research Engineers** Ms K U C Perera Mr J C Rajaguru Ms P M Y S Pathiraja	 PhD, M Eng, MSc, MIAgrE, MIE (SL), C Eng Upto 25.07.2011 BSc Eng –From 26.07.2011 MPhil, MA(Buddhist Stud) BSc Eng, C Eng, MIE(SL) N.D.T. BSc Eng MSc Eng, BSc Eng upto 01.05.2011 BSc Eng From 07.04.2011

Electrical & Electronics Mechatronic Department (E/E & M)	**Head, Electrical/Electronies & Mechatronic** Eng (Mrs) N G D Wijesiriwardane **Research Engineers** Mr P H K Karunasekara Mr L K D C A Karunaratne Mr S M Handagala Mr W M I P Divarathne Ms P Madhavi Perera	 MEng, C Eng, MIE (SL) MSc Eng, EC (UK) PART I BSc (Eng) BSc Eng- From 10.03.2011 BSc From 10.03.2011 upto 01.07.2011 BSc Eng- From 09.05.2011

Design Fabrication & Consultancy for Industry Department (DF & CI)	**Director (Technical)** Mr A A S P Jayasinghe **Principal Research Engineers** Eng H M L U Herath Eng A R C Salgado Mr S P Perera	 BSc Eng Hons BSc Eng BSc Eng EC(UK) Part I & II, NDT From 01.03.2011
Technology Park	**Research Engineers** Mr W R Sovis	 NDT, CEI Part 1 upto 28.04.2011
Techno Marketing Department (TMD)	**Head, Techno Marketing** Eng M V S A K Perera **Actg. Director (Technical)** Eng M A M Fernando **Principal Research Engineer** Mr D V Wimalasena **Marketing Officer** Mr S Wijesooriya	 PG.Dip.,IESL Part I & II, C.Eng., MIE(SL) upto 03.08.2011 PGDip (Energy) IESL Part I & II, CEng, MIE (SL) from 04.08.2011 NDT, Dip in Marketing(SL) BSc (Agriculture) Special
Finance Department	**Finance Manager** Mrs D V S Perera **Accountant** Mr J M R S Jayasinghe	 ICMA Professional Part II, BSc (Bus Adm) Special ICASL Professional Part I
Internal Audit	Mr. P B Susantha	HNDA Chartered Licentiate Part I & II

Administration Department	**Director (Human Resources)** Mrs. J.P.A.D.S.I. Jayasekera — MPM, B.Sc, Dip in Personnel Mgmt, Dip. in Advanced English **Assistant Director (Administration)** Mr. K.G.N. Ratnayake — B.Com (Special), National Dip in HRM

Supplies Department	**Supplies Officer** Mr. R.H.A. Jeewananda — BSc (Physical Science)

Library	**Librarian** Mrs. Thusharika Dewagiri — MSSc, Lib Special Degree ASLLA

Total Staff as at 31.12.2011

Top Management	-	04
Engineers	-	32
Other Executives	-	10
Junior Managers	-	05
Management Assistants (Technical)	-	18
Management Assistants (Non – Technical)	-	45
Primary Level Staff (PL1, PL3)	-	155

Total Staff - 269

04. Chairman's Message

The National Engineering Research and Development Centre (NERDC) of Sri Lanka, the premier Engineering Research and Development Organization in the Country is striving under difficult conditions to deliver fruitful outcomes to the society. As pointed at many a forum, it is best if the Researchers especially in the engineering fields be drawn from Universities as they pass out. However, unlike the Private Sector, the Government Institutions such as NERD Centre does not have the luxury of tapping them young as we are governed by the public administration and treasury circulars for determining the methodologies for recruitment and even for their basic remunerations. The present remuneration levels are so low that even the selected few leave the Centre no sooner they find an organization offering better salaries and the research work they had been carrying on gets stranded. Even in 2011, although we were able to recruit 09 engineers, already 02 of them have left NERDC to join Sri Lanka Telecom and the Water Supply and Drainage Board. NERDC also has a large number of vacancies at Middle levels due to the avalanche effect of the above during the past few years. As per the scheme of recruitment and the commensurate salaries offered for such senior positions in the research cadre, it is now proven that no Professional Engineers with 10 years relevant experience in research activities after the Degree would join the NERDC for such middle level positions of NERDC. Although, we value very much the attempts made by the Government to introduce research allowance to researchers at the 2011 budget proposals, the NERDC could not make use of this opportunity due to lack of qualified staff remaining at NERDC. NERDC presently does not even possess a single engineer with Doctoral Degrees as we lost the two experienced researchers/engineers with Doctoral Degrees during 2011; one reaching 60 yrs, the compulsory age for retirement for R&D Institutions and the other due to his leaving to University of Moratuwa on his return to NERDC after completing a Doctoral Degree in renewable energy. It is time that the policy makers take a serious note of this situation which otherwise would paralyze the R&D activities at these R&D Institutions, the key to the envisaged Knowledge Economy.

However, even with these bottlenecks, NERDC has provided valuable inputs to the economical and social development of the country, being engaged in a number of R&D projects. In fact, the increased activities reflect a 46 % increase over that of 2010. The main outputs and outcomes of these activities have created new products and technologies, which have assisted to improve productivity, efficiency of the industrial and agricultural sectors. As per the objectives & goals of the Centre and the Government Development Plan, the NERDC has focused on these R&D projects and Technology Transfer activities to address mainly the un-employment issues, high price of constructional materials, shortage of labour in vital industries and energy crisis in Agriculture and Plantations Sectors. The NERDC has also increased its contractual services over that of 2010 by a margin of 20% reflecting the attempts taken by NERDC to work closely with the Industry.

The Sri Lankan construction industry tends to follow the performance of the economy very closely. As economic conditions improved in the country in 2010/11, so did the building construction activities. Hence, NERDC focused its activities on its cost effective building technologies. Having understood the issues preventing the Technology Transfer, NERDC commenced training both skilled and unskilled persons, the Draughtsman, the Engineers engaged in the building construction industry, on the NERDC developed technologies. At the same time, under the guidance of Presidential Secretariat, the Centre initiated the construction of Library Buildings for schools in the Monaragala district along with ‘Dayata Kirula’ using NERDC cost effective technologies. The project, which utilized the Civil Defense Force Personnel for construction activities has been very successful and in fact the same methodology has been extended to construct similar library buildings for 27 rural schools in the Anuradhapura district to coincide with 2012 ‘Deyata Kirula’. Considering the effectiveness of these technologies, steps have also been taken to introduce the cost effective housing technologies to all Provincial Councils with the assistance of Finance Commission of Sri Lanka, thanks to the continuous guidance being offered by the Presidential Secretariat. It is envisaged to construct initially few buildings under the Provincial Ministries of Education and Health with NERDC Technologies. The Centre also commenced in giving an architectural outlook to Nurses’ Quarters at Polonnaruwa, a Government sector building presently being constructed using NERDC technologies in an attempt to promote cost effective building technologies developed by NERDC.

Application of Fire Woodchips as fuel energy for tea drying industry was a great achievement in the field of Renewable Energy. A fuel wood chips feeding system has now been developed and the technology transfer process is in progress. With the transfer of this technology, large amount of energy utilized in the tea drying sector is expected to be saved assisting the economy and the environment.

The Technology Market Place, the vision of the Ministry of Technology and Research, a “Show & Tell’ Exhibition to the Industry, held at BMICH during October 2011 was certainly instrumental to give visibility of the Center’s capabilities to the industry and to the technologies developed by the centre.

The 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. 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, many a Research Engineer/Scientist, Technologist, Technician and the Support Staff for the services rendered by them to achieve the objectives of the centre.

Eng. D R Pullaperuma
Chairman

05. Human Resources

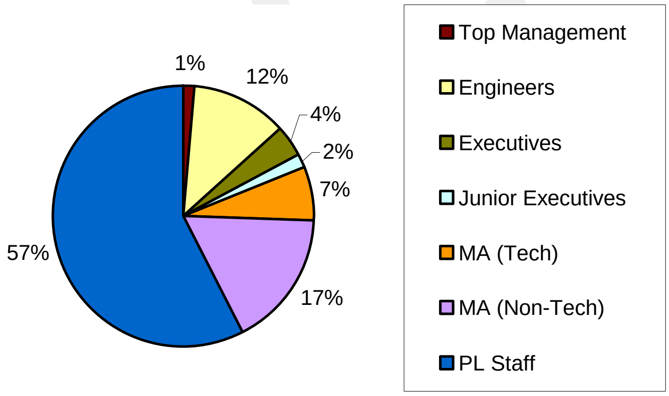
Human Resources (HR) is the most effective tool and important resource of any organization because of its liveliness and its essentiality. In other words without the Human Resource, the other resources cannot be effectively utilized or managed in an organization.

The permanent HR cadre of the Centre constitutes 269 employees and this includes Engineers numbering 36 comprising the Top Management, Other Executives being 10, Junior Executives 05, Technical Staff 18, Management Assistants 45, PL Staff the majority being 155.

The summary information on permanent cadre of the Centre is as follows;

Summary Information on Staff Strength

Category	Nos
Top Management	04
Engineers	32
Executives	10
Junior Executives	05
Management Assistant (Tech)	18
Management Assistant (Non-Tech)	45
Primary Level Staff	155
Total	**269**



Following new recruitments have been made either internally or externally to the Centre during the year 2011.

Name	Designation	Department	Date
01. Mr. S G J U Samarasinghe	Research Engineer	RED	01/03/2011
02. Mr. S P Perera	Research Engineer	D F & CI	01/03/2011
03. Mr. D T S U Dissanayake	Research Engineer	Civil Engineering	10/03/2011
04. Mr. W M I P Divarathne	Research Engineer	E/E & M	10/03/2011
05. Mr. S M Handagala	Research Engineer	E/E & M	10/03/2011
06. Ms. N P Kumarasinghe	Research Engineer	RED	10/03/2011
07. Ms L M S D Perera	Research Engineer	RED	10/03/2011
08. Ms. N S Gamage	Research Engineer	E &EMC	07/04/2011
09. Ms. P M Y S Pathiraja	Research Engineer	AE&PHT	07/04/2011
10. Mr. M D Sahardeen	Research Engineer	E &EMC	02/05/2011
11. Ms. Madavi Perera	Research Engineer	E/E & M	09/05/2011
12. Mrs. D M A K Digala	Technical Officer	Civil Engineering	01/02/2011
13. Mr. R Tusiyandan	Technical Officer	E &EMC	01/02/2011
14 Eng. K Y H D Shantha	Actg. Director (Technical)	AE&PHT	26/07/2011
15. Eng. M A M Fernando	Actg. Director (Technical)	TMD	04/08/2011

The service periods of the following employees have been extended with the approval of the Board of Directors during the year 2011.

Name	**Designation**	**Department**	**Date** *(By One year)*
01. Mr H P Ranasinghe	Welder/Fitter	AE&PHT	17/04/2011
02. Eng M V S A K Perera	Head/ TMD	TMD	21/04/2011 up to 03/08/2011
03. Mr M Cyril Silva	Labourer	Civil Engineering	01/07/2011
04. Mr H A J Fernando	Electrician	E/E & M	26/09/2011
05. Ms H D N Chitra	Draughtsman	AE&PHT	08/11/2011
06. Ms L S I Silva	Draughtsman	Civil Engineering	15/11/2011
07. Mr H A Jayawardena	Labourer	Civil Engineering	16/12/2011

Following Staff Members have retired from the Centre service during the year 2011

Name	**Designation**	**Department**	**Date of Resigned**
01. M Mr W.R.Sovis	Research Engineer	Techno Park	28/04/2011
02. Dr T B Adikaranayake	Senior Research Fellow /HoD	AE&PHT	25/07/2011
03. Eng M V S A K Perera	HoD	TMD	03/08/2011
04. Mr S A D Hemachandra	Labourer	Administration	29/01/2011
05. Mr K S P Silva	K.K.S	Administration	03/02/2011
06. [I A B Kamalananda	Motor Mechanic	Vehicle Maintenance	23/12/2011 (Demised)

Following Staff Members have resigned from the Centre service in the year 2011

Name	**Designation**	**Department**	**Date of Retirement**
01. Mr. J C Rajaguru	Research Engineer	AE&PHT	01/05/2011
02. Mr. W M I P Divarathne	Research Engineer	E/E & M	01/07/2011
03. Mr. G M Saliya Aponsu	Labourer	Administration	12/07/2011
04. Mr. D T S U Dissanayake	Research Engineer	Civil Engineering	26/09/2011
05. Ms H M D T K Palapathwala	Draughtsman	Civil Engineering	22/10/2011
06. Dr M Narayana	Research Fellow	RED	11/12/2011

5.1 Capacity Building/ Skill Development Programmes

5.1.1 In-house Training Programmes

- 03 day In-house training programme was conducted at the NERD Centre for all Engineers and the Executives on ISO 9001:2008 Standard and Quality Management System from 11-13 January 2011 with the assistance of Sri Lanka Standard Institutions (SLSI), providing course materials and Resource Personnel.

- An Awareness Programme of a half day on ISO 9001:2008 Standard and Quality Management System was conducted on 15th February 2011 for all the other staff, i.e Management Assistants, both Technical, Non-Technical and the Primary Level Staff.

- The objective of conducting those two programs was to educate the staff of the Centre in order to obtain the ISO 9001:2008 Standard for our main Products & Services. The Centre has already formed a committee comprising its members from all technical and other supportive departments working towards achieving the decided outcomes and the committee has already commenced drafting the Quality Policy and Procedures manuals for identified services and activities.

- An Awareness Programme on the National Vocational Qualifications (NVQ) was conducted with the participation of officials of NAITA on 24th February 2011 to stress the importance of NVQ qualification for skill development as a preliminary preparation before conducting the NVQ tests. The Masonry, Carpentry, Electrical and Computer Technology and Welding fields were covered in this Awareness Programme thus conducted and those briefing sessions were very useful for our staff to prepare themselves to face for the tests.

- The Centre is always cautious on health and safety of its staff to protect them from accidents and occupation hazards. On 28th of June 2011, a half-day programme was conducted with the assistance of officials of the Labour Dept. including the District Factory Engineer, Eng. Anura Kumara. The topics discussed were very crucial and valid so as to apply within the workplace scenario in maintaining the workplace discipline, such as wearing safety helmets, safety shoes and handling tools etc where applicable. They made a commendable effort to educate our staff on labour laws, safety methods & mechanisms, possible accidents in the work place environment and prevention & precautionary measures. They used different modes to deliver the facts such as lectures, power point presentations, interactive dialogues, distribution of leaflets and showing a video film etc which helped to capture the attention of the audience throughout the period. The participants were all Management Assistants, both Technical, Non-Technical and the Primary Level Staff of the Centre.

- A computer programme on office packages basically MS-Word and MS-Excel was conducted for all the Technical Staff (Technical Officers and the Technical Assistants) for 11 Saturdays using in-house resources (Resource Personnel and Physical Resources) with a view to improving their ICT knowledge and skills for effective applications in their day to day duties.

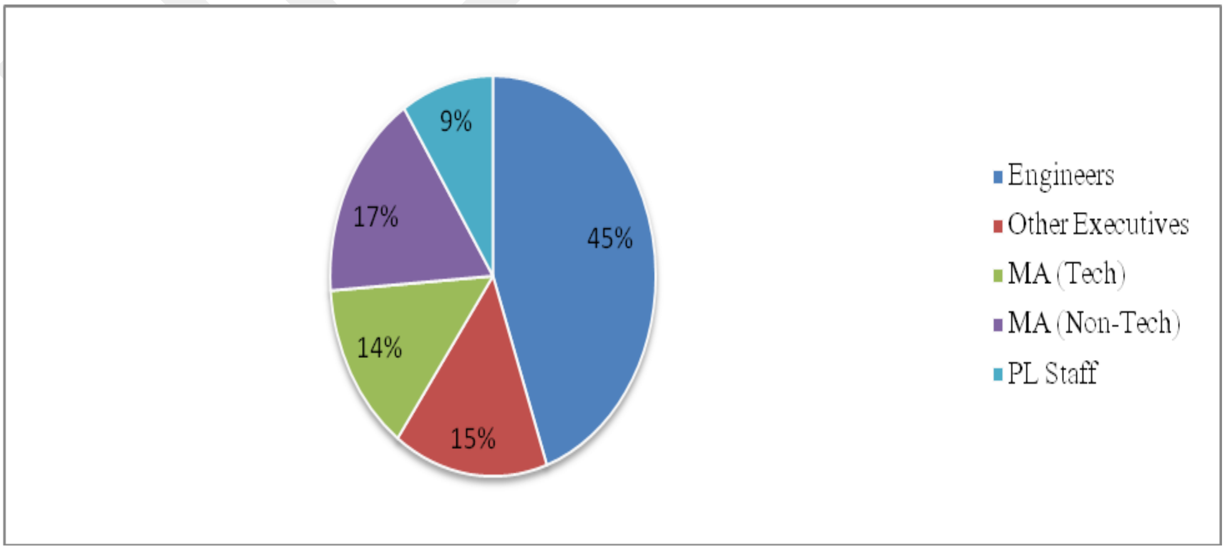
5.1.2 Local Training/ Skill Development Programmes

NERDC always provides training opportunities for its staff to enhance their knowledge and skills in order to equip them with the present day needs and to obtain optimal service out of them.

In the year 2011 Centre has provided eighty three (83) local training opportunities to its staff members at a cost of four hundred sixty five thousand seven hundred and fifty Sri Lankan Rupees (SLR. 465, 750.00). Whilst providing such local training opportunities NERDC has also given 15 staff members' foreign training under Scholarships/Fellowship/ short term Training Programmes to gain international exposure to develop their knowledge and skills. Such knowledge and skills is bound to inject new working styles and methodologies, which could be applicable to most of our systems.

Information on Local Training Opportunities provided by the Centre in 2011

Staff Category	Nos.
Engineers	29
Other Executives	10
MA (Tech)	9
MA (Non-Tech)	11
PL Staff	6
Total	**65**



Skilled Development Programmes - 2011

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
1	All Engineers & Executives			In-House Training Programme on "ISO 9001-2008 Standard & the Preparation of Quality Manual and Internal Auditing for ISO 9001-2008 Quality Management System"	3 days (11-13 Jan 2011)	Sri Lanka Standards Institution (SLSI)	Rs. 84,000.00
2	Mrs. K B H V Leitan	Management Assistant	Administration	Effective Telephone Skills for Front Line Staff	One day (14/01/2011)	Institute of Industrial Techno Management	Rs. 4,037.75
3	Mrs. P G N Chithralatha	Management Assistant	Administration	Effective Telephone Skills for Front Line Staff	One day (14/01/2011)	Institute of Industrial Techno Management	Rs. 4,037.75
4	Mrs. J P A D S I Jayasekera	Director (HR)	Administration	Training Programme on "Legal Aspects of Human Resource Management"	2 days (21-22 Jan 2011)	Institute of Industrial Techno Management	Rs. 6,283.20
5	Mr. B P Susantha Kumara	Internal Auditor	Internal Audit	English Programme	18 weeks (02.01/2011)	Sri Lanka Institute of Development6 Administration	Rs. 10,000.00
6	All Non-Executive Staff	Management Assistants TO, TA, Supervisors, Draughtsman PL Staff		In-House Awareness Training Programme on "ISO 9001-2008 Quality Management System"	Half Day (15/02/2011)	Sri Lanka Standards Institution (SLSI)	Rs. 25,200.00
7	Mrs. Chandani Wanniarachchi	Management Assistant	Administration	Administration Law and Human Resources Development	One day (04/03/2011)	Institution for Construction Training and Development	Rs. 3,000.00
8	Mrs. L K Wasantha Nilmini	Management Assistant	Administration	Administration Law and Human Resources Development	One day (04/03/2011)	Institution for Construction Training and Development	Rs. 3,000.00
9	Miss. Shyamali Priyangika	Management Assistant	RED	Administration Law and Human Resources Development	One day (04/03/2011)	Institution for Construction Training and Development	Rs. 3,000.00
10	Mr. N L Jayawickrama	Electrician	EE&M	One Day Programme on Diesel Generators	05/03/2011	Institute of Industrial Techno Management	Rs. 3,998.40
11	Eng. D R Pullaperuma	Chairman	Higher Management	One Day Workshop on" The Approach to Energy Auditing"	11/03/2011	IESL	Rs. 500.00
12	Mr. J A A D Jayasuriya	HoD/E&EMC	E&EMC	One Day Workshop on" The Approach to Energy Auditing"	11/03/2011	IESL	Rs. 1,000.00
13	Miss. N P T Perera	Research Engineer	E&EMC	One Day Workshop on" The Approach to Energy Auditing"	11/03/2011	IESL	Rs. 1,000.00

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
14	Eng. W K R Peiris	Principal Research Engineer	AE&PHT	Technical Sessions on Four Wheel Tractors	25/03/2011	Agricultural Machinery Manufacture and Suppliers Association of Sri Lanka	Rs. 2,000.00
15	Mrs. A M A K Digala	Technical Officer	Civil	Short Course on Plumbing and Drainage Services	3 days 21-23 March 2011	Construction Equipment Training Centre	Rs. 13,800.00
16	Eng. G K K A De Silva	DDG(R&D)	Higher Management	SME Access to Finance Programme	26/03/2011	Federation of Chambers of Commerce & Industry of Sri Lanka	Rs. 4,286.00
17	Eng. M A M Fernando	Research Fellow	TMD	SME Access to Finance Programme	26/03/2011	Federation of Chambers of Commerce & Industry of Sri Lanka	Rs. 4,286.00
18	Mr. D V Wimalasena	Principal Research Engineer	TMD	SME Access to Finance Programme	26/03/2011	Federation of Chambers of Commerce & Industry of Sri Lanka	Rs. 4,286.00
19	Miss. D P Edirisinghe	Technical Assistant	Civil	SME Access to Finance Programme	26/03/2011	Federation of Chambers of Commerce & Industry of Sri Lanka	Rs. 4,286.00
20	Mr. H M L U Herath	Principal Research Engineer	DF&CI	Human Resource Through Disciplinary Management	2 days (06/07 May 2011)	Centre for Studies in Disciplinary Management	Rs. 7,000.00
21	Mr. H D T A S Jayasinghe	OIC/Techno Park	T/Park	Human Resource Through Disciplinary Management	2 days (06/07 May 2011)	Centre for Studies in Disciplinary Management	Rs. 7,000.00
22	Mr. L K D C A Karunaratne	Research Engineer	FF&M	How to Motivate less Productive People at Work	one day (07/06/2011)	Skilled Development Fund Ltd.	Rs. 5,143.00
23	Miss. W Maheshi Wijethune	Management Assistant	E&EMC	Training Programme on "MS Excel"	04 days (10-13 May 2011)	Academy of Finance Studies	Rs. 6,500.00
24	Mr. H M L U Herath	Principal Research Engineer	DF&CI	Training Course on Maintenance & Trouble Shooting of Hydraulic Systems	5 Saturdays June 2011	Construction Equipments training Centre	Rs. 9,500.00
25	Mrs. H M D T K Palapathwala	Draughtsman	Civil	Diploma in Quantity Surveying	26 days from June 2011	Institute for Construction Training & Development (ICTAD)	Rs. 25,000.00
26	Mr. W M I P Divaratne	Research Engineer	EE&M	Seminar on World Accreditation Day	09/06/2011	Sri Lanka Accreditation Board	Rs. 5,000.00
27	Mr. S M Handagala	Research Engineer	EE&M	Seminar on World Accreditation Day	09/06/2011	Sri Lanka Accreditation Board	Rs. 5,000.00

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
28	Mrs P M G Pathiraja	Senior Research Scientist	E&EMC	"Workshop on Introduction to Sampling and Basic Principles of Sample Selections in S&T Research"	22/06/2011	Sri Lanka Association for the Advancement of Science (SLAAS)	Rs. 2,500.00
29	Ms P M Yamuna Pathiraja	Research Engineer	AE&PHT	Workshop on Developing Positive Attitudes and Motivation	07/06/2011	Institute of Personnel Management Sri Lanka	Rs. 5,865.00
30	Ms L M S G Perera	Research Engineer	E&EMC	Workshop on Developing Positive Attitudes and Motivation	07/06/2011	Institute of Personnel Management Sri Lanka	Rs. 5,865.00
31	Ms N S Gamage	Research Engineer	RED	Workshop on Developing Positive Attitudes and Motivation	07/06/2011	Institute of Personnel Management Sri Lanka	Rs. 5,865.00
32	Ms N P T Perera	Research Engineer	E&EMC	Developing Capacity in Sri lanka to Conduct Cleaner Production Assessment	7 days from 20 June 2011	National Cleaner Production Centre, Sri Lanka	Rs. 25,000.00
33	Mr B P Susantha Kumara	Internal Auditor	Internal Audit	Seminar on "New Developments in Tax Laws"	18/06/2011	Skills Development Funds Ltd.	Rs. 3,500.00
34	Mrs A G N P K Anhettigama	Accounts Assistant	Finance	Seminar on "New Developments in Tax Laws"	18/06/2011	Skills Development Funds Ltd.	Rs. 3,500.00
35	Eng N G D Wijesiriwardana	HoD/EE&M	EE&M	Seminar on Managing Change Successfully	24/06/2011	Skills Development Funds Ltd.	Rs. 8,011.43
36	Eng G K K A De Silva	DDG(R&D)	Higher Management	Pre Conference Workshop on Design of Water Retaining Structure	2 days 18/19 June 2011	University of Peradeniya	Rs. 10,000.00
37	Mr B D R K Jayawardane	Electronic Technician	EE&M	Electrical Installation & Maintenance Programme	3 days 02/03 July 2011	Institute of Industrial Techno Management	Rs. 5,500.00
39	Mr R Thusianthan	Technical Officer	E&EMC	Workshop on Corporate Writing	01/07/2011	IESL	Rs. 4,000.00
40	Mr B P Susantha	Internal Auditor	Audit	Diploma in English for Professional Level (3)	18 Weeks 30/06/2011	Sri Lanka institute of Development Administration	Rs. 15,000.00
41	Mr D T S U Disanayake	Research Engineer	Civil	Course on Project Management	2011/07/30,31 (02 Days)	University of Peradeniya	Rs. 10,000.00
42	Mr R Thusiyanthan	Technical Officer	E&EMC	Seminar on International Technical Seminar	2011/07/29	Institution of Incorporated Engineers Sri Lanka	Rs. 1,500.00
43	Mr K E J Fernando	Electronic Technician	E&E	Course on Maintenance of Electronic & Mechatronic of Construction Equipment	2011/08/08 - 2011/08/12 (05 days)	Constructions Equipment Training Centre	Rs. 9,000.00
44	Mr B P Susantha Kumara	Internal Auditor	Audit	Seminar on Effective International Auditing	2011/08/20	Skiled Development Fund	Rs. 3,500.00
45	Mrs Lakshika Wijayanthi	Management Assistant	Audit	Seminar on Effective International Auditing	2011/08/20	Skiled Development Fund	Rs. 3,500.00

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
46	Mrs C N Warnakulasuriya	Management Assistant	Audit	Seminar on Effective International Auditing	2011/08/20	Skiled Development Fund	Rs. 3,500.00
47	Mrs J P A D S I Jayasekera	Director (HR)	Administration	Course onHuman Resource Through Disciplinary Management	2011/08/19,20	Centre for Studies in Disciplinary Management	7,500.00
48	Miss K U C Perera	Research Engineer	APHT	Training on ISO/ IEC 17025:2005 Basic on Quality Assuarance, Calibration & Measurement Uncertainly	2011/09/01,02	Sri Lanka Accreditation Board	Rs.7,000.00
49	Mr L B Aruna Shantha	Technical Assistant	DF&CI	Training Program Maintenance of Construction Equipment	2011/08/22 - 2011/08/26 (05 days)	Construction Equipment Training Centre	Rs.16,000.00
50	Mrs A K Digala	Technical Officer	Civil	Workshop on Practical Aspects of Bid Evaluation Guided Through Case Studies and Pricing of Bid	08/25/2011	Institute for Construction Training and Development	Rs.3,900.00
51	Mrs Praba Paranawithana	Technical Assistant	Civil	Workshop on Practical Aspects of Bid Evaluation Guided Through Case Studies and Pricing of Bid	08/25/2011	Institute for Construction Training and Development	Rs.3,900.00
52	Mr Kapila Peiris	Research Fellow	APHT	Seminar on Nano Technology and Its Application	09/30/2011	Institute of Chemistry Ceylon	Rs.4,000.00
53	Mr S G J U Samarasinghe	Research Engineer	RED	Seminar on Nano Technology and Its Application	09/30/2011	Institute of Chemistry Ceylon	Rs.4,000.00
54	Mr S A Ruwan Nishantha	PL 3	Vehicle Maintenance	Course on Maintenance of Building Air Conditioning Systems	2011/09/17,18,24, 25 (04 days)	Construction Equipment Training Centre	Rs.9,500.00
55	Mr I Priyashantha Perera	PL 3	Vehicle Maintenance	Course on Maintenance of Building Air Conditioning Systems	2011/09/17,18,24, 25 (04 days)	Construction Equipment Training Centre	Rs.9,500.00
56	Mr M D Shemil Nilanka	PL 3	Vehicle Maintenance	Course on Maintenance of Building Air Conditioning Systems	2011/09/17,18,24, 25 (04 days)	Construction Equipment Training Centre	Rs.9,500.00
57	Miss L M Sujani D Perera	Research Engineer	RED	Workshop on Research Methodology	2011/09/19 - 2011/09/23 (05 days)	Sri Lanka institute of Development Administration	Rs.10,000.00
58	Miss Nipunika Gamage	Research Engineer	E&EMC	Course on Electrical Energy Conservation in Industries and Services Organization	23rd 24th September 2011	Institute of Industrial Techno Management	Rs.6,283.20
59	Mrs A K Digala	Technical Officer	Civil	Seminar on Quality Assurance of Construction Materials	09/27/2011	The Chamber of Construction Industry	Rs.7,980.00
60	Mr W P R D Weerasinghe	Principal Research Engineer	Civil	Seminar on Use of Timber in Construction	10/27/2011	Institute for Construction Tranining and Development	Rs.2,000.00
61	Mr S M Handagala	Research Engineer	EE&M	Embedded Systems and Microcontrollers	15/10/2011	International Conference on Information and Automation for Sustainability (IFIAFS)	Rs.6,000.00
62	Mr L K D C A Karunaratne	Research Engineer	EE&M	Robotics and Robot Design	16/10/2011	International Conference on Information and Automation for Sustainability (IFIAFS)	Rs.6,000.00

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
63	Mr K G N Rathnayake	Asst. Director (Admin)	Administration	Seminar on Taiichiona's Seven Waste Project"	25/10/2011	National Institute of Labour Studies	Rs. 1,950.00
64	Mr M D Sahardeen	Research Engineer	E&EMC	Workshop on Construction of Water Treatment Plant	04th-06th Nove. 2011	Construction Equipment Training Centre	Rs. 13,800.00
65	Mrs Praba Paranawithana	Technical Assistant	Civil	MS Office& MS Excel Computer Training Programme	30th July, 06th August 20th Aug. 10th Sep 2011	NERDC	Rs. 15,000.00
66	Mrs K S S Weerasinghe	Technical Assistant	Civil				
67	Mr D H P Kalyanasiri	Technical Assistant	Civil				
68	Mr L B Aruna Shantha	Technical Assistant	Civil				
69	Mr B J A Sumararatne	Technical Assistant	DF&CI				
70	Mrs K K D Dilrukshi	Technical Assistant	RED	MS Office & MS Excel Computer Training Programme	26th Sep, 28th Sep. 30th Sep, 03rd Oct., 14th Oct, 17th Oct, 19th Oct. 2011	NERDC	Rs. 5,750.00
71	Mr N A D D J Prasanna	Technical Assistant	AE&PHT				
72	Mr . H D C Hettiarachchi	Technical Assistant	Administration				
73	Mrs D P Edirisinghe	Technical Assistant	Civil				
74	Mrs D M A K Digala	Technical Assistant	Civil				
75	Ms N T Rajapaksha	Technical Assistant	AE&PHT				
76	Mr M A S Bandara	Supervisor (Electrical)	EE&M				
77	Mr W W P K Perera	Principal Research Engineer	Civil	Workshop on International Conference on Structural Engineering Construction & Management	15th - 17th Dec. 2011	University of Peradeniya	Rs. 15,000.00
78	M r W W P K Perera	Principal Research Engineer	Civil	Inaugural Annual Session 2011 Society of Structural Engineers	22/11/2011	Society of Structural Engineers	Rs. 1,500.00
79	Mr J M R S Jayasinghe	Accountant	Finance	Seminar on Budget Proposals - 2012	30/11/2011	IDB	Free of charge
80	Miss J D Darshanie	Cashier	Finance	Seminar on Budget Proposals - 2012	30/11/2011	IDB	Free of charge
81	Mr A H Piyasiri	DDG(S)	Higher Management	Awareness Programme on Corporate Planning Budgeting	01st – 02nd Dec. 2011	Dept. of Public Enterprises	Rs. 10,000.00
82	Mrs D V S Perera	Finance Manager	Finance	Awareness Programme on Corporate Planning Budgeting	01st – 02nd Dec. 2011	Dept. of Public Enterprises	Rs. 10,000.00
83	Mr K G N Rathnayake	Asst. Director (Admin)	Administration	Human Resource Through Disciplinary Management	14th & 15th Dec. 2011	Centre for Studies in Disciplinary Management	Rs. 7,500.00

FOREIGN SCHOLARSHIPS/SEMINARS/TRAINING-PROGRAMMES/WORKSHOPS - 2011

No	NAME OF THE OFFICER	POST	NAME OF THE PROGRAMME	PERIOD	COUNTRY	SPONSORING INSTITUTIONS
1	Mr A A S P Jayasinghe	Director (DFCI)	Training on Operation of CNC Lath Machine	04/04/2011-09/04/2011	Taiwan	Victor Taichung Machinery Works Co.Ltd., Taiwan
2	Mr G K G J M S P Jayathilake	Director (DFCI)	Training on Operation of CNC Lath Machine	04/04/2011-09/04/2011	Taiwan	Victor Taichung Machinery Works Co.Ltd., Taiwan
3	Mr K T Jayasinghe	Principal Research Engineer	International Hands-On Training on Energy Audit for Energy Professionals in Developing Countries	04/05/2011-14/05/2011	India	Centre for Science & Technology of the Non-Aligned and other developing countries (NAM S&T Centre), India and Centre for Energy Studies and Policy Analysis (CESPA), India
4	Mr N K Edirisinghe	Director (RED)	SIS-SAWTEE Project Strengthening Capacity on Sustainability Criteria for Bio Energy (ISO 13065) in South and Southeast Asia Regions.	19/04/2011–21/04/2011	Nepal	SIS (Swedish Standards Institute)
5	Mr N K Edirisinghe	Director (RED)	Pre-Seminar and the Subsequent ISO PC248/WG Meetings of SIS-SAWTEE Project Strengthening Capacity on Sustainability Criteria for Bio Energy (ISO 13065) in South and Southeast Asia Regions.	14/05/2011-20/05/2011	Germany	SIS (Swedish Standards Institute)
6	Eng D D A Namal	Director General	The Third Meeting of Lites Asia, Sparc International Lightings Event and Mercury Policy Meeting in Sydney	06/06/2011-09/06/2011	Australia	Australian Government
7	Mr C A U Dalpathado	Architect	Korea's STP (Science & Technology Park) Sharing Programme	29/08/2011-09/08/2011	Korea	Korea Innovation Cluster Foundation (KICF)
8	Mr M A S Bandara	Supervisor (Electrical)	Training Programme on Automated Battery Tester	19/09/2011-23/09/2011	Germany	Digatron Industrie - Electronik GmbH
9	Mr K Y H D Shantha	Actg. Director (AE&PHT)	Training Workshop on Technopreneurship for South Countries	26/09/2011-30/09/2011	Malaysia	International Science, Technology and Innovation Centre (ISTIC)
10	Mr N K Edirisinghe	Director (RED)	Pre-Seminar and ISO Meeting	02/10/2011-06/10/2011	Kenya	SIS, Swedish Standards Institute
11	Eng D R Pullaperuma	Chairman	WIPO Regional Forum on University – Industry Collaboration to Promote Transfer	02/11/2011-04/11/2011	Vietnam	World Intellectual Property Organization (WIPO)
12	Mr J A A D Jayasuriya	Research Fellow HoD/E&EMC	NSF fellowship for 'Energy Management and Cleaner Production in Small and Medium Scale Industries (SMI)"	31/10/2011-02/12/2011	Netherlands	Netherlands Fellowship Programme (NFP)

No	NAME OF THE OFFICER	POST	NAME OF THE PROGRAMME	PERIOD	COUNTRY	SPONSORING INSTITUTIONS
13	Mr D M Punchibanda	Principal Research Engineer	Training Programme on “Green Growth Action Against Climate Change”	10/10/2011-19/10/2011	Korea	Korea International Cooperation Agency (KOICA)
14	Ms N T Rajapaksha	Technical Assistant	Training Programme on 3-D Modeling Using Solid Works Software	06/11/2011-14/01/2012	India	Government of India
15	Mrs N P Kumarasinghe	Research Engineer	Training Programme on Solar Energy Technolgies and Applications	14/11/2011-03/12/2011	India	Government of India
16	Mr G K K A De Silva	Deputy Director General (R&D)	Regional Workshop for Development of Management Skills on Innovation, Technology Transfer and Successful Technology Licensing for Research and Development Institutions in Asian Region	28/11/2011-01/12/2011	Philippines	International Atomic Energy Agency (IAEA)
17	Eng M A M Fernando	Actg. Director (TMD)	WIPO/UNESCAP Regional Workshop on Research on Intellectual Property Economics and Policy	08/12/2011-09/12/2011	Thailand	World Intellectual Property Organization (WIPO)
18	Mr J A A D Jayasuriya	Research Fellow HoD/E&EMC	SAARC Seminar on Solar Energy	20/12/2011-22/12/2011	Maldives	SAARC Energy Centre

06. Performance Highlights of the Year 2011

As a premier Research and Development organization in the Country, National Engineering Research and Development Center (NERDC) of Sri-Lanka has involved in Number of R&D projects providing valuable inputs to the development of economical and social aspects of the country. Main outputs and outcomes of these activities have created new products and technologies which assist to improve productivity, efficiency of the industrial and agricultural sectors. As per the objectives & goals of the Centre and the Government Development Plan, the NERDC has focused both R&D and Technology transfer activities through the projects to address un-employment problems, high price of constructional materials, shortage of labour in different industries and energy crisis in agriculture and plantations sectors etc..

Under the guidance of Presidential Secretariat, the Centre has initiated to construct Library Buildings for schools in Moneragala District using NERDC cost effective technologies. The project which utilizes the Civil defense force and in fact to same methodology has been extended to construct similler library building for 27 rural schools in Anurathapura district to coincide with 2011 'Deyata Kirula'. Considering the effectiveness of these technologies, steps have also been taken to introduce the cost effective housing technologies to all Provincial Councils with the assistance of Finance Commission of Sri Lanka. Initially, it has been decided to construct few buildings under the Provincial Ministries of Education and Health.

Application of Fire Wood chip as fuel energy for tea drying industry was a great achievement in the field of Renewable Energy. The system has been developed and the technology transfer process is in progress. With the transfer of technology, it is expected to save large amount of energy utilized in the tea drying sector.

Key involvements of NERD Centre during the year 2011 could be summarized as follows

1. Research and developments
2. Popularization of technologies developed
3. Technology transfer activities
4. Construction and installation of pilot projects
5. Construction projects
6. Consultancy Services
7. Infrastructure developments

6.1. RESEARCH AND DEVELOPMENTS

National Engineering Research and Development Centre has involved in number of Research and Development activities to develop new technologies and products considering the key requirements of the country such as applications of renewable energy for industries, environmental pollution, alternative building materials for construction industry, and high productivity of the agricultural and food processing industries. Some important research and development projects carried out by the Centre are given below.

I. Project: Scaling up of fuel wood chips feeding system at Deen Side Tea factory at Gampola

Objectives of the project: Scaling up and improvement of the screw conveyor type wood chips feeding system installed by NERDC at Deen Side Tea Factory at Gampola as the pilot unit.

Advantages from the Project outcomes

- Minimum 20% saving of fuel wood is possible.
- Fuel wood chips from short rotation cropping plantations such as Gliricedia could be used for tea drying, which contributes towards making tea production sustainable.
- No modifications are required for the existing furnace.
- The operation could be reverted back to conventional system at anytime.
- Payback period is less than 2 years
- If applied to all tea factories operating firewood furnaces, considerable amount of fuel wood can be saved at national level.

II. **Project:** Development of cost effective biomass operated dryers

Objective: Development and testing of innovative and cost effective Biomass fuelled dryer for industrial applications

Advantages from the Project outcomes

- Inclusive of a heat generating system using biomass as source fuel
- Drying is efficient because of better contact with hot air due to rotary Movement.
- Minimum fuel wood consumption due to direct heating using flue gas.
- Dryer also operates as a Siever to remove fine particles while drying.

III. **Project :** Bio-gas System for Domestic Applications

Objective: Testing of the performance of biogas digester for co-digestion of human waste with kitchen waste for domestic applications.

Advantages from the Project outcomes
L.P gas consumption of domestic level for cooking purpose could be reduced by 80%.

IV Project: Grid connection of 100kWe gasifire based power generation system

Objectives: Grid connection of the power generation system and study of the performance.

Main outcome of the project is to generate electricity through biomass.

V. Project : Development of a Pepper Harvesting Machine

Objective: To introduce a machine to separate pepper berries from pepper stems.

Advantages from the Project outcomes

- High quality output
- More output
- High productivity

(Now, field trials of this machine is in progress).

VI. Project : Pilot scale study to identify the possibility to use horizontal subsurface flow constructed wetlands for treatment of domestic wastewater at household level.

Advantages from the Project outcomes

This system could be used to treat wastewater at domestic level. It will improve healthy environment of the people. Also this technology will be more useful for areas with high population density.

VII. Project : Seed Oil extraction machine

Objective: To develop a machine to produce oil from local traditional seeds, leaves to satisfy demands from indigenous medical industry

Advantages from the Project outcomes

To improve the Efficiency and productivity of the industry

VII. Project : Paddy field bund making machine

Objective : To develop a mechanism to form the bunds in paddy fields minimizing labour involvement

Advantages from the Project outcomes
This will minimize the labour involvement in paddy cultivation.

IX. Project : Development of a power weeding machine

Objective : To reduce labour involvement in weeding process for paddy cultivation

6.2. POPULARIZATION OF TECHNOLOGIES DEVELOPED

To popularize the technologies developed by NERD Centre, the Centre has carried out awareness programmes throughout the Country with the assistance of government and non-governmental organizations. Major part of the activities have been coupled with Government key programmes such as Divinaguma and Dayatakirula.

At the regret of the Presidential Secretariat and the Financial Commission of Finance Ministry, NERD Centre has commenced organizing Training Programmes and Demonstrational programmes in the year 2011 among Governmental and Provincial council officials so that NERDC technology could be utilized for future public buildings .

Licenses

It has been identified that number of licenses awarded to licensees by NERDC are not sufficient to cater the demand of the country. In order to fulfill the demand for cost effective construction technologies for housing the NERDC was able to organize three training programmes for Engineers, Draftsmen, and masons in 2011.

Special on site Training Programme at Karaveddi

Onsite training programme was organized for 30 participants from Karaveddi of Northern province at Karaveddi Vidatha Centre site in Karaveddi. Main objective of the programme was to use NERDC

Cost effective construction technologies for construction and renovation works of the damaged buildings effected by the terrorist activities during the past 30 years.

International programmes conducted by NERDC

I. SAARC Conference on Stand-alone Village Hydro Schemes

This programme was conducted by the NERDC on 3-5 May 2011 in collaboration with SAARC Secretariat and the Ministry of Technology and Research in Sri Lanka. There were Eight foreign participants from Bhutan, India, Nepal and Six local participants attending the workshop. First two days was focused mainly on presentations on different technical aspects of Village Hydro schemes by nine resource persons from Sri Lanka. During this period participants benefited for exchanging their experiences in Village Hydro Schemes in their countries.

They also visited the small scale village hydro scheme implemented in Rathnapura area in Sri Lanka during the last day of the workshop.

II. IOR – ARC Regional Workshop on Cost Effective Building Technology

NERDC conducted Two day workshop on Cost Effective Housing Technology with the 1st day being focused on presentations made by 06 Resource Persons from Sri Lanka on the different areas of the cost effective housing technology while the 2nd day was dominated for demonstration of such technology to the participants at the NERDC – Technology Park.

The Centre was able to exchange knowledge and experience on cost effective technologies with the participants.

III. Business 2 Business Programme

This programme was funded jointly by Asian and Pacific Centre for transfer of Technology of the United Nations, Economic and Social Commission for Asia and the Pacific (APCTT) and was organized jointly by National Engineering Research & development Centre (NERDC), Ceylon Chamber of Commerce (CCC) and National Cleaner Production Centre of Sri Lanka.

Objective of the Programme
Fostering Business partnerships to promote the adoption and utilization of Renewable Energy technologies

Outcomes of the Project :
Experts from the NERD Centre were able to share knowledge on renewable energy and related technologies. Also the participants benefited by exchanging ideas based on the opportunities available in Sri Lanka for the use of renewable energy.

Seminar for Tea Industry
One day Seminar was held on the theme of Energy efficiency opportunities in tea industry with introduction of fuel wood chips feeding system for tea drying in Ratnapura. 116 participants from tea industry have been participated.

Awareness Programmes

NERD Centre has conducted awareness programmes on NERDC developed technologies for the key officers in both Government & private sectors. Main outcomes of these programmes are as follows;

1. To identify the suitable persons for relevant technologies
2. To identify the technology required for the different areas of the country based on the needs and available resources.

Date	Awareness programmes conducted	No. of participants
10/03/2011	Awareness programme on NERDC Cost Effective Building Technology for Draftsmen and Technical Officers of Municipal Councils, Urban Councils & Pradeshiya Sabas (Half day programme)	45
04/07/2011	Awareness programme on NERDC technologies for officers of Wayamba Province	200
05/08/2011	Awareness programme on NERDc technologies for officers of Uva Province	125
21/09/2011	Awareness activity on cost effective building technologies of the NERDC was held at the Ministry of the Finance for the Chief Secretaries & Deputy chief Secretaries of the Provincial Councils.	30
27/09/2011	Awareness programme on NERDC technologies for the Officers of Southern Province.	102
12/12/2011	Awareness programme for Decision makers in all the Provinces in collaboration with the Finance Commission.	
15/12/2011	Awareness Programme at Palagala VRC.	54

Training programmes

Followings training programmes were conducted at the request made by different organizations.

Date	Name of the programme	No. of Participants
11/08/2011	Concrete Door & Window Frames Manufacturing Training Programme at Horrowpathana Divisional Secretariat, (Deyata Kirula 2012 Programme)	49
09/09/2011	Cost Effective Building Technology Training Programme for Draft persons.	36
16/09/2011	Cost Effective Building Technology Training Programme for Draft persons.	30
27/09/2011	Cost Effective Building Technology Training Programme for Draft persons.	56
17/11/20011	Cost Effective Building Technology Training Programme for Civil Engineers.	6

Exhibitions

National Engineering Research and development Centre has participated in the following exhibitions held during 2011 in different parts of the country. Centre has received effective feedback information from general public.

Date	Name of the Exhibition & Venue
04-10/02/2011	"Deyata Kirula" 2011 Exhibition at Buttala
01-03/04/2011	"Kithulaka Waruna" Exhibition at Vihara Maha Devi Park, Colombo, Organized by TM Dept. & Participated by Agriculture Dept
10-12/04/2011	SME Exhibition – 2011 at the BMICH
24-26/06/2011	Inco - 2011 Exhibition at the BMICH
07-08/07/2011	Exhibit items were given to the NG/ Pitipana, St. Mary's College Negombo
08-11/07/2011	Exhibition - 2011Province Industrial Exhibition , Eastern Province , Trincomalee (Tailor made programme)
11-14/08/2011	Vidulka Exhibition - participated by EMC Dept. & RE Dept
07-09/09/2011	Agricultural exhibition - 2011 at Agricultural Training Centre at Jaffna
13/09/2011	info@Ruwanpura - 2011 Educational & Trade fair Exhibition at Ruwanpura National College of Education - Kahawatta
07 - 09/10/2011	"Techno 2011" Exhibition
24-25/10/2011	"Technology Market Place" – BMICH
17/12/2011	Exhibition at Hikkaduwa, Seenigama Devaalaya
25-31/12/2011	"50 Vidu Arunalu 2011" Educational Exhibition & Trade fair

Gold Awards – 2011 Techno Exhibition

NERDC was awarded a Gold Medal for the most Innovative Stall at the Techno 2011 Exhibition.

'Divineguma' Programme

NERD Centre has played a vital role to the success of the 'Divinugama' programme conducted by Ministry of Economic Development. The Centre was able to participate in the 'Divineguma' Exhibitions, conduct need assessments of the proposed beneficiaries when selecting technologies developed by NERD Centre in improving their livelihood under its cottage industry cluster programme and to finalize beneficiaries along with identified technologies with high demand. Presently, arrangements are in the progress to transfer the technologies thus identified through 'Divinaguma' Programme such as virgin coconut oil extraction machine etc.

6.3.TECHNOLOGY TRANSFER ACTIVITIES

Following technologies have been transferred to the entrepreneurs selected through paper advertisements.

- Manioc slicer/vegetable slicer
- Industrial wood gas stove

Manioc Slicer

This machine has been introduced during the year 2011 and fruits, vegetables and manioc could be sliced with high quality, improving the value of the products.

Industrial wood gas stove

Industrial wood gas stove could be used to prepare foods in economical way operating with biomass energy.

Patent – Activities

Arrangements have been made to get patents for proven technologies developed by the NERD Centre during 2011.

1. Small scale continuous pepper Seeds separating machine
2. Flexible type screw feeding system for ** wood chips used for tea industry.

Paper & Publication presented

Following technical papers have been presented and published during the year 2011

Paper	Authors	Presented at	Published At
Monitoring of Total Suspended Particles & Toxic Gasses in Stationary Combustion Systems	K T Jayasinghe	IESL	IESL, Journal, Vol: XXXXIV No 04, October 2011
Improving producer gas quality from fluidized bed gassifire for power generation.	E.A.N.K. Edirisinghe	VIDULKA; Renewable Energy Symposium conducted by Sustainable Energy Authority of Sri Lanka	
Cleaning of producer gas from fluidized bed gassifire	E.A.N.K. Edirisinghe	105th Annual sessions of IESL on 24 Oct 2011	

Technology Market Place

One of the important activities the Centre has been involved during the year was to participate at the Technology Market Place held the BMICH (Bandaranayake Memorial International Centre Hall) organized by Ministry of Technology and Research. The Centre achieved successful results by participating in the exhibition and demonstrating some of the different technologies developed by Centre.

Awareness Programme for the Decision makers of provinces in collaboration with Finance Commission – 12.12.2011

This Programme was conducted with the assistance of Finance Commission in the NERD centre. There were 59 high level officers from 9 provinces including Chief Secretaries and other Senior Officers of the each provinces participated for this program. Ffollowing decisions were taken at the workshop held in 12.12.2011.

i) Each and every province to undertake at least two building constructions using NERDC cost effective building technology as pilot projects in the year 2012.

ii) The pilot projects may be located in an appropriate area that could be easily demonstrated to the public.

iii) NERDC support should be obtained for the supervision of constructions, facilitating coordination with contractors and material suppliers.

iv) Assistance of the NERDC should be obtained to train contractors, skill labourers, technical officers and engineers in the province in order to popularize the technology among the public. In this regard, provincial officials should directly contact NERDC and coordinate for such training programmes.

Newspaper Articles and Electronics Media Conducted

In-order to popularize and to educate the people on NERD activities, the Centre has used both electronic media and newspapers during the year 2011.

6.4. CONSTRUCTION AND INSTALLATION OF PILOT PROJECTS

I. Construction of Foot Bridge

Construction of Foot Bridge at Pollebada village in Monaragala district.

Technologies used: Ferro-cement Technology
Benefits of the Project

- Construction within a Shorter period
- Less maintenance and maintenance could be attended by local villagers
- Provide access for 25 families

II. Construction of Water Tank

Construction of 5000 litre water tank at Bandaragala- Weharagala
5000 litre water tank has been constructed with precast ferro-cement technology at Weharagala Thanamalvila.

Advantages of the Project :

- Low cost
- Construction within a Shorter period
  Cost : LKR. 35,000/-

6.5. CONSTRUCTION PROJECTS

Construction Activities with cost effective technologies

In order to demonstrate the technologies introduced by NERD Centre, few important construction projects have been undertaken and completed in different areas of the country.

Project No.1

Construction of anaerobic digestion system for disposing liquid toilet waste in Army Camp at Boayagane.

Capacity : $20m^3$

Benefits of the Project:
Generated biogas is used for cooking in the Kitchen of the Camp

Project No.II

Construction of Vidatha Building at Karaveddi/Jaffna

New Vidatha Building for Karaveddi divisional Secretariat divisions was constructed at Karaveddi, Jaffna.

Technologies Used

- Pre-stressed columns
- Concrete doors and window frames
- NERDC developed Slab system

Total cost : 5.2 m

Duration : 03 months

Project No.III

Construction of Hostel Building for Nurses Quarters at Pollonnaruwa Hospital

Flow Area : 11000sq.ft.
Cost : 27M

Technology used

- Cement, Soil block – No plaster is required
- Pre-stressed columns
- Concrete door and window frames

6.6. CONSULTANCY SERVICES

Consultancy Services provided by NERD Centre mainly based on the technologies developed by NERD Centre and focused to the special problems that do not have solutions from the other parties at affordable cost to the nation. National Engineering Research and Development Centre consultant services are available in the fields of construction industry, agriculture industry, post harvest technology, renewable energy, energy management and environmental pollution etc.

Consultancy services have been carried out under different areas;

i. Civil Engineering
ii. Energy and environmental engineering
iii. Renewable engineering
iv. Electrical, electronic and mechatronics
v. Design, Fabrication and Consultancy

I. Civil Engineering

Consultancy services to the construction of buildings with cost effective technology

a. *Construction of 22 Nos. of school library buildings using cost effective technologies in Monoragala District.*

Special features: NERDC foundation, Pre-stressed columns, pre-stressed concrete trusses and purllings, Cement soil blocks.

b. *After having the Cement Soil block demonstration programme in Presidential Secretariat Some projects were proposed by the Presidential Secretariat in parallel to 2012 Dayata Kirula Programme.*

c. Consultancy Services to Vidatha Centres

Dept. of Civil Engineering has provided consultancy services for construction of Vidatha Centres using NERDC technologies for preparing plans, estimates and the supervision. The following are the Vidatha Centres that were involved.
Pelmadulla, Kahawatta, Weligapola, Opanayake, Ehaliyagoda, Imbulpe, Nivitigala, Haliella, Kiriella

Total value of the projects : 75M and construction works are in progress.

II. Energy & Environmental Management Centre (E&EMC)

Energy & Environmental Management Centre has involved in providing consultancy services to Industry in the following areas.

- Energy Audits
- Laboratory testing
- Providing solution to control environmental issues for industries
- Providing environmental monitoring services as per regulations
- Boiler performance & flue gas analysis
- Energy efficiency related designs
- Industrial process monitoring & consultancy

Total value of the services for the year 2011 – 6,465,605/-

Providing Solutions for Environmental Problems
Request has come from Sand Washing Plant to overcome their key environmental problems which are as follows.

1. Mud water has caused to pollute ground water in the areas and created unhealthy situation to the general public
2. Collected silt after washing has created problems to adjacent land.

Solutions

The Centre has designed technological system to re use the mud water through a filter system and silt has been used to refill the excavated pit.

Benefits of the project

1. Used water is recycled back to the process in a systematic way.
2. Ground water extraction could be minimized as a major portion of used water could be recycled back to the system and only loss is due to evaporation.
3. No ground water pollution as the system is fully separated from the ground with concreted bottoms.
4. Dried silt/mud could be sold for land filling activities.

III. Consultancy Services provided by the Renewable Energy Dept.

Consultancy services provided by the Department of Renewable Energy is as follows;

- Repairing of the stack of the incinerator

  The Centre has provided services to repair the 45 feet height and 1.5 feet diameter stack incinerator at Kurunegala hospital.

- Repairing of LPG burning system of incinerator at Ragama Hospital. The automatic industrial type burner of the incinerator was completely renovated.

IV. Consultancy services provided by Electrical, Electronic and Mechatronic Dept.

Department has provided consultancy services covering following categories.

- Training programmes on Basic of Programmable logic controls
- Two training programmes have been conducted.

Testing calibration and Laboratory Services

NERD Centre has provided services to the industry, based on laboratory services and the other testing facilities during the year 2011.

Total value of the Laboratory Tests completed during year 2011- Rs. 5,841,024/-

V. Consultancy services undertaken by the Dept. of Design Fabrication & Consultancy to Industry are as follows;

- Design of new moulds and dies for rubber industry.
- Production of design and draft drawings.
- Provide technical knowledge to Janaseva Ltd. On CAD/CAM, supported moulds making.

Total value of the services provided by the DF&CI –Rs. 1,629,634/-

6.7. INFRASTRUCTURE DEVELOPMENT

Construction of Toilet Blocks

In order to improve the sanitary facilities of the Centre, toilets block has been constructed consisting of 06 Nos. of toilets.

Floor Are :700 Ft^2

Technology used

Cost effective technology developed by the NERD Centre including cement soil blocks.

07. Social, Welfare & Religious Activities

7.1 Welfare Association of NERDC

Welfare Association of the NERDC has organized following activities during the year 2011.

- Participation of the Elle Tournament organized by the Sri Lanka Elle Association in memory of late Mr. D A Rajapaksha 08 days from 05.09.2011 in Mullativu District
- Blood Donation campaign in commemoration of the late Vidyajyothi Dr.A N S Kulasinghe, one of the founder Chairman of this Centre was held on 26.10.2011

7.2 Religious Associations

Two religious Societies have been established in the NERDC namely, Buddhist Society and Catholic Society. Several activities and programmes were organized by these two societies with the objective of mental and spiritual well being of the NERDC staff members. One prominent feature of these two societies is that every employee is a member of either the Buddhist Society or the Catholic Society voluntarily.

Following events had been organized by the two societies in the year 2011.

7.2.1 Buddhist Society activities

- Organized a Pirith Chanting Ceremony on 03 January 2011
- A shramadana campaign was organized on 09.04.2011 to clean the area near the Water Tank at Jayawardhenene Children's Home at Weligampitiya,Ja-Ela
- A sermon was delivered by Ven. Bogoda Piyananda , the Registrar of the Ja-Ela Shashanarakshaka Bala Mandalaya in commemoration of Sri Sambudhatwa Jayanthiya 2600 on 12.05.2011
- Handing over of the Water Tank newly constructed by the NERDC to the Jayawardhenene Children's Home at Weligampitiya,Ja-Ela to commemorate the Vesak Festival in May 2011
- A sermon was organized to be delivered by Ven. Nawala Dhammananda to commemorate the Poson Festival on 14.06.2011
- Two-day pilgrimage to Polonnaruwa was organized on 27 & 28 of August 2011
- A step was taken to broadcast a sermon through the "Buddhist" Channel on 26.10.2011 in commemoration of the late Vidyajyothi Dr.A N S Kulasinghe, one of the founder Chairman of this Centre.
- An alms -giving programe was held for Jayawardhene Children's Home at Weligampitiya, Ja-ela on 16/12/2011

7.2.3.Catholic Society activities

- Annual Christmas Mass was organized by the Catholoic Society and it was conducted by Rev. Father Darel Coongne of Supuwath Arana, Seeduwa on 22.12.2011.

08. Accounting Policies

01. General Accounting Policies

General

The balance sheet as at 31.12.2011 and the related financial statements have been prepared on the historical cost convention, in accordance with generally accepted Accounting principles applied and adopting accrual concept on a consistent basis in conformity with the Sri Lanka Accounting Standards.

02. Assets and Basis of Valuation

Fixed Assets

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.

	%
Buildings	2.5
Officer Equipments	15
Tools	15
Demonstration Items	15
Computers	33.33
Vehicles	15
Furniture & Fittings	10
Plant & machinery& Lab Equipment	15
Library Books	05
Infrastructures	15

* Funds for acquisition of fixed assets are provided mainly by the General Treasury.

According to the board Meeting No.1-2011 dated 21/01/2011, item No. 3.2 board had granted the approval to re value the buildings & infrastructures. This revaluation was done as at 31.12.2007.

Revaluation of buildings and infrastructures have been completed as per SLAS 18 and adjustments are done in year 2010. Further we have revalidated following buildings which are omitted in year 2010.

(Figures in Rs.)

Assets Buildings	Total Cost as at 31.12.2007	Accum.Dep.as at 31.12.2007	W.D.V As at 31.12.2007	Re valued amount as at 31.12.2007	Re valuation reserve-surplus/(Deficit)
Model Auditorium				165,002.00	165,002.00
Generator room Building for Generator Building for stand by Generator				990,000.00	990,000.00
APH Building	231,239.20				231,239.20
Recoating of Photosphere Meter	6,900,886.24	5,383,221.95	1,517,664.29	2,000,000.00	482,335.71
Total revaluation increase for year 2011					1,868,576.91

As a result re-valuation reserve is shown as Rs 350,060,917.20

During the year one car and a van has been allocated to centre under the budget circular No 155 by the Department of National Budget. These two vehicles cost is computed considering the following elements. These vehicles were issued to the Centre through Toyota Lanka (PVT) Ltd.

Figures in Rs.

Vehicle No	WP KR 5435	WP NB 1631	Total
Cost of two vehicles issued by Treasury	6,750,000.00	9,100,000.00	15,850,000.00
Insurance	92,491.72	65,054.17	157,545.89
License	3,410.00	4,538.00	7,948.00
Total	6,845,901.72	9,169,592.17	16,015,493.89

* Patents and Trade Marks obtained by the Centre is shown in the Balance Sheet separately under Patents and Trade Marks.

03. Inventories

Basis of valuation

Stock of raw material	-At cost or net realizable value whichever is lower using FIFO costing method
Finished goods &Work in progress	- Work in progress on civil projects are valued after considering the direct material, direct labour and 100% overhead charge

04. Construction contracts

- Construction contracts are undertaken for public sector as an effective tool to popularize the NERD developed technologies to the public.
- Contribution/deficit of such a construction project is worked out after completion of the project subject to certification of bills.
- W.I.P on construction contracts is indicated at cost after charging staff salaries and overheads.

05. 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. This provision is funded by the Treasury.

Provision is calculated as follows

(last drawn Basic Salary plus cost of living) x ½ x Completed Number of Years.

06. Temporary call deposits

Funds received for the ICAMS project is invested in State Institutions Temporary Surplus Trust Fund maintained at Bank of Ceylon.
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.

07. Government Grant

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

08. Trade & other Receivables

Debtors and other recoverable are stated at the value estimated to be realized net of provisions for bad & doubtful receivables. Debts over 5 year are provided at 100% and other debts are provided at 5% of its value. Further specific debts which cannot be collected are written off if evidence is available.

09. Provisions

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

10. Creditors

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

11. Contingent Liabilities

As per the provision of the Factory's Ordinance No 45 of 1942 and Workmen's Compensation Ordinance No 19 of 1934 and the clause No 9 of the chapter X11 of the E-Code we have referred the particulars of injured employee Mr. M P W P Kulasekera, foundry man of RED on 3/12/2011 to Commissioner of compensation for a decision. It is expected to a fine of approximately Rs 500,000.00.

Mr S Silvera has file a case in Labour Tribunal Wattal, case No 31/194/2005 in it decision has been given as dismiss the case and against this decision he has appeal the case in High Courts Gampaha, Case No44/2010 .

12. Revenue

Major source of revenue is Recurrent Grant and Research grant by the treasury.

13. 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. Management had decided to reduce the overhead absorption rate from 100% to 35% with effect from 1/7/2011.

14. Differed income

Differed income is ascertained from the depreciation asset purchase out of government funds.

15. Expenditure

Expenses are recognized in the income statement on the basis of a direct association between the cost incurred and the earning of the specific items of income where appropriate. All expenditure incurred in running of the Centre and depreciation of the property, plant & equipment has been charged to income in calculating the income over expenditure. Management has decided not to charge Labour & overheads to maintenance jobs.

16. Transport Income from employees

According to the board decision No 6.1 of board meeting No 09-2011,dated 28/09/2011 members of the board agreed to waive off the transport fee recovered from the employees below the MM Level Category ,having noticed that there is no entitlement for group transport for non executives as per the relevant circular. Management was advised to prepare clear procedures before implementing this, in order to avoid any Trade Union issue/Employee unrest such as demanding of expansion of facility

17. Research & Development

Accounting Policy for Research & Development mainly funded by the Treasury. Income received from outside clients is set off against the expenditure.

When costing the research projects direct material, labour & overheads has been considered. With effect from 1/7/2011 overhead rate has been reduced from 100% to 35%

09. Notes to the Accounts

Notes to the accounts as at 31 st December 2011

Figures in Rs

1. Provision for Bad debts

Customer	Debtors Balance Rs.	Rate applied	Bad Debts Prfovision Rs.
100% Bad debts has been provide with under stated customers			
Accessories Net Work Pvt. Ltd	197,625.00	100%	197,625.00
Hiriyala	4,466,423.22	100%	4,466,423.22
DFCC Bank	45,717.53	100%	45,717.53
Pathadumbara Pradeshiya Saba	221,513.00	100%	221,513.00
Plantation Human Development Trust	214,810.00	100%	214,810.00
University Of Sri Jayewardenepura	210,320.35	100%	210,320.35
North -East Hou.Rec.Pro.(NEHRP)	100,000.00	100%	100,000.00
National Water Supply & Drainage Board	185,183.10	100%	185,183.10
Institute Of Post Harvest Technology	65,251.00	100%	65,251.00
5% Bad debts has been provide with under stated customers			
Hiriyala	663,837.15	5%	33,191.86
Ministry Of Environment	6,148.45	5%	307.42
North Colombo Teaching Hospital	270,786.65	5%	13,539.33
Army Headquarters South Wing	1,588,098.77	5%	79,404.94
Sri Lasnka Ayuvedic Drug Corporation	107,381.43	5%	5,369.07
Pelwatte Dairy Industries (Pvt) Ltd	371,152.65	5%	18,557.63
No bad debts has been provide with under stated customers			
Pending Work order -2011	2,575,291.95	0%	
Ministry of Power & Energy	4,950.00	0%	
Ministry of Technology & Research	108,931.08	0%	

2 Prior year adjustments as at 31/12/2011

Figures in Rs

Reason	Effect to Statement of Financial Performance	Effect to statement of Financial Position

2.1 N/RED/TT/287/2009

Repairing of Minuwangoda Crematorium

Payment to Liyanage Pvt Ltd amounting to Rs 76,000.00 has been omitted at the time of closing the project in year 2009

Project position after adjustment	Project as at 31/12/2009	Project as at 3112/2011
Income	469,297.13	469,298.13
Expenditure	357,151.30	433,151.30
Income over expenditure	112,145.83	36,146.83

Effect to Statement of Financial Performance: (76,000.00)

Effect to statement of Financial Position: Creditors balance should be increase by Rs 76,000.00

2.2 N/CVL/TT/87/2005

Consultancy of Construction of Vidatha Centre Kesbawe

Under provision of contract bill amounting to Rs 201,088.00 payable to Kalhara Builders has been omitted at the time of closing the project in year 2006.

Effect to Statement of Financial Performance: (189,364.53)

Effect to statement of Financial Position: Creditors balance should be increase by Rs. 189,364.53

Project position after adjustment	**2005**	**2006**	**2007**	**Total**
Income	1,173,329.16	495,670.96	2,446,018.15	4,115,018.27
Expenditure	369,937.45	475,273.85	2,641,755.87	3,486,967.17
	803,391.71	20,397.11	(195,737.72)	628,051.10

2.3 Under Provision of Gratuity

In the year 2010 gratuity has been under provided for the following employees

	2010 Provision	**Correct Provision**	**Difference**
I A B Camalananda	-	213,150.00	213,150.00
D C S Silva	203,470.00	222,860.00	19,390.00
D D A Namal	683,870.00	779,185.00	95,315.00
	887,340.00	1,215,195.00	327,855.00

Effect to Statement of Financial Performance: (327,855.00)

Effect to statement of Financial Position: Provision for Gratuity figure should be increase by Rs 327,855.00

Gratuity Provision change due to corrections in appointment date 521,223.00

Effect to Statement of Financial Performance: (521,223.00)

Effect to statement of Financial Position: Provision for Gratuity figure should be increase by Rs521,223

<table>
<tr>
<td>

2.4 EMC /TT/2/2008

Environmental Services for Miscellaneous customers

WH Tax amounting to Rs 1,955.00 & Rs 3,600 due from Unilever Sri Lanka Ltd & Milco Pvt Ltd respectively has been absorbed by the project as they have failed to pay

<table>
<tr><th></th><th>Project as at 31/12/2008</th><th>Project as at 31/12/2011</th></tr>
<tr><td>Income</td><td>2,528,136.66</td><td>2,522,581.66</td></tr>
<tr><td>Expenditure</td><td>1,624,628.37</td><td>1,624,628.37</td></tr>
<tr><td></td><td>903,508.29</td><td>897,953.29</td></tr>
</table>

</td>
<td>(5,555.00)</td>
<td>Debtors figure has being reduced by Rs1,955.00</td>
</tr>
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<td>

2.5 RED/COM/136/2004

Saliyapura Bio Gas Digester

Repairs done for the Saliyapura Bio gas digester was closed.

<table>
<tr><th></th><th>Project as at 31/12/2005</th><th>Project as at 31/12/2011</th></tr>
<tr><td>Income</td><td>1,434,423.00</td><td>1,434,423.00</td></tr>
<tr><td>Expenditure</td><td>1,056,267.00</td><td>1,898,088.10</td></tr>
<tr><td></td><td>378,156.00</td><td>(463,665.10)</td></tr>
</table>

</td>
<td>(841,821.10)</td>
<td>WIP-Technology transfers will be reduced by s 841,821.10</td>
</tr>
<tr>
<td>

2.6 Long outstanding customer advances are taken in to income accounts as per Board meeting No 1-2010 held on 21/01/2010,Item No 4.2 and the advances in which jobs are completed but not taken as a income.

<table>
<tr><th>Customer</th><th>Year</th><th>Amount Rs.</th></tr>
<tr><td>E.V.Merrion</td><td>2005</td><td>1,750.00</td></tr>
<tr><td>H.A.B.David</td><td>2005</td><td>1,312.50</td></tr>
<tr><td>H.A.Perera</td><td>2005</td><td>1,750.00</td></tr>
<tr><td>Agro Technica Ltd</td><td>2005</td><td>875.00</td></tr>
<tr><td>Tong Keang Construction</td><td>2005</td><td>875.00</td></tr>
<tr><td>M.Darmadasa</td><td>2005</td><td>21,875.00</td></tr>
<tr><td>M.Darmadasa</td><td>2005</td><td>17,937.50</td></tr>
<tr><td>Industrial Development Authority</td><td>2005</td><td>15,750.00</td></tr>
<tr><td>M.D.T.I.Roshan</td><td>2005</td><td>1,750.00</td></tr>
<tr><td>Mahaweli Livestock</td><td>2005</td><td>6,562.50</td></tr>
<tr><td>O.A.T.Gunarathne</td><td>2005</td><td>1,750.00</td></tr>
<tr><td>R.Malige</td><td>2005</td><td>1,312.50</td></tr>
<tr><td>R.V.R.M.Ranasinghe</td><td>2005</td><td>1,312.50</td></tr>
<tr><td>R.W.Liyanage</td><td>2005</td><td>1,750.00</td></tr>
<tr><td>CECB</td><td>2005</td><td>393.75</td></tr>
<tr><td>T.B.Jeerasinghe</td><td>2005</td><td>350.00</td></tr>
<tr><td>Link Engineering</td><td>2005</td><td>6,704.28</td></tr>
<tr><td>Old Fashion Resturent</td><td>2005</td><td>7,000.00</td></tr>
<tr><td>Courtoulds Clothing Lanka (Pvt) Ltd</td><td>2006</td><td>205,462.25</td></tr>
<tr><td>Pahala Horawadunna Funeral Society</td><td>2006</td><td>4,025.00</td></tr>
<tr><td>Buddhi Enterprices</td><td>2006</td><td>885.50</td></tr>
<tr><td>Wimalasena</td><td>2006</td><td>5,685.31</td></tr>
<tr><td>E A Shanthi</td><td>2006</td><td>1,750.00</td></tr>
<tr><td>W.A.J.K.Senadeera</td><td>2006</td><td>17,500.00</td></tr>
<tr><td>A.M.B.Priyantha</td><td>2006</td><td>1,328.25</td></tr>
<tr><td>Gamunu Wijesinghe</td><td>2006</td><td>7,437.50</td></tr>
<tr><td>Panagoda Army Camp</td><td>2006</td><td>1,312.50</td></tr>
</table>

</td>
<td>Prior to Year 2010 659,179.77 and Year 2010 28,568.75</td>
<td>Customer advance account will be reduced by Rs 687,748.52</td>
</tr>
</table>

F.Hewakuruppu	2006	21,875.00		
S.A.C.S.Subasinghe	2006	8,050.00		
Kamal Jayawardana	2006	4,375.00		
Anuradha Printers Ltd	2006	892.50		
Channa De Zoysa	2006	17,500.00		
D.N.H.Amarasuriya	2006	17,500.00		
Susith Industries.-CME/Com/43/04	2006	1,500.00		
Samarasinghe Windscreen	2007	10,062.50		
Ajith Kumara	2007	218.75		
Ceylinco Devaloperes Ltd	2007	1,811.25		
I C D L Industrial	2007	2,716.88		
I C D L Industrial	2007	452.81		
Kalhara Builders	2007	1,750.00		
K.C.M.Construction	2007	4,980.94		
P.L.B.Senarathne	2007	1,750.00		
Room To Read Srilanka	2007	25,156.25		
A.G.A.R.Perera	2007	17,500.00		
I B S F Company (Pvt) Ltd	2007	5,250.00		
Muttaiya & Sons	2007	8,750.00		
R.P.C.Construction	2007	3,062.50		
S T. Bulathgama	2007	437.50		
U.S.S.Engineering (Pvt) Ltd.	2007	905.63		
K.S.J.Construction	2007	11,018.44		
P.Gunawardana - Ad W O No 1255 CVL/Com/3	2007	15,312.50		
Tech Masters (Pvt) Ltd	2007	13,125.00		
K.L.Suranga Pieris	2007	10,500.00		
Mell Brass Industries Pvt Ltd	2007	875.00		
N.G.B.Sandaruwan	2007	8,050.00		
S.L.Exports Pvt Ltd	2007	40,862.50		
Vocational Training Authority	2008	32,906.75		
H A Jayarathne	2008	2,187.50		
Shahin Perera	2008	4,375.00		
Tajit & Company Pvt Ltd	2009	6,918.40		
Silvermill Coco Venture (Pvt) Ltd	2009	7,412.57		
Sabaragamuwa Provincial Council	2009	2,741.76		
S S Absekara	2009	10,000.00		
		---------------- 659,179.77		
Industrial Development Board Of Ceylon	2010	10,193.75		
Unilever Sri Lanka Ltd	2010	18,375.00 28,568.75		
		-------------- 687,748.52 =========		
2.7 Revaluation of Fixed assets -Buildings At the time of re-valuation of Building following buildings were omitted from 1/1/2008 Model auditorium 165,002.00 Generator room 990,000.00 1,155,002.00 Depreciation 2008 28,875.05 2009 28,875.05 2010 28,875.05			Prior to 2010 Profit will be reduced by 57,750.10 Profit for year 2010 28,875.05	Building balance as at 31/2/2007 should be increased by Rs 1,155,002 Revaluation reserve will be increase by Rs 1,155,002.00 Accumulated Depreciation will be increased by Rs.86,625.15

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>2.8 Unclaimed Credit balances
<table>
<tr><th>Creditor</th><th>Amount Rs</th><th>Board Approval Reference</th><th>Remark</th></tr>
<tr><td>R R Construction</td><td>12,650.23</td><td rowspan="2">Board Meeting NO 7-2011 Item No 4.6</td><td>C/20/849- Constriction of control panel at Bentota Pra Saba- Retention held in year 2002</td></tr>
<tr><td>Fentions Ltd</td><td>26,060.00</td><td>A/12/780-Welfare Building in 2002</td></tr>
<tr><td>Nirmanthi Timber stores</td><td>4,800.00</td><td>Board Meeting NO 8-2011 Item No 4.6</td><td>Purchase of Timber in year 2006</td></tr>
<tr><td>Kalhara Builders</td><td>11,723.47</td><td></td><td>No separate mobilization advance kept in year 2005</td></tr>
<tr><td></td><td><u>55,233.70</u></td><td></td><td></td></tr>
</table></td>
<td>Profit prior to 2010 will be increased by Rs 12,650.23

Profit prior to 2010 will be increased by Rs26,060

Profit prior to 2010 will be increased by Rs 4,800.00</td>
<td>Retention balance will be reduced by Rs 12,650.23

Profit prior to 2010 will be increased by Rs26,060

Creditors balance will be reduced By Rs. 4,800.00</td></tr>
<tr><td>2.9 Over provision in Incentive

In year 2009 Incentive has been over provided</td>
<td>Profit prior to 2010 will be increased by Rs2,194.52</td>
<td>Accrued charges will be reduced by Rs 2,194.52</td></tr>
<tr><td>2.10 Over provision of Depreciation in AE Building

Cost of Agriculture building has been calculated with the outstanding payment to Ishani Dias, amounting to Rs 289,048.98 in the year 2003 . According to the board meeting No 8-2011, amount Item No 4.6 board has granted permission to write of the outstanding payment .This has resulted in reduction of depreciation provision. Revaluation of reserve account has increased by Rs 231,239.20</td>
<td>Profit prior to 2010 will be increased by Rs57,809.78</td>
<td>Sundry creditors will be reduced by Rs 289,048.98 and Revaluation reserve will increase by Rs 231,239.20</td></tr>
<tr><td>2.11 Customer advances

Mr. Aruna Pathirage advance payment of Rs 5,000/- to manufacture fiber glass door & Window frames. As this customer had not claimed from 2008 management had decided to take this an income.</td>
<td>Profit prior to 2010 will be increased by Rs5,000</td>
<td>Customer advance balance will be reduced by Rs 5,000.00</td></tr>
</table>

2.12 R/19/867 Pilot Plant for Malt Bladed Wind pump Income received in 2002 for the testing of Multy bladed wind pump is taken to income according to the board meeting no 9-2011,item 4.8	B/f P & L balance before 1/1/2010 will be increase by 32,812.50	Customer advance balance will be reduced by Rs 37,500 & Commissioner General of Inland revenue will be increased by Rs 4,687.50
2.13 Under provision in Hire of vehicle In the year 2009 vehicle charges payable to Milan Tours has been under provided.	B/f P & L balance before 1/1/2010 will be Reduced (2,820.00)	Accrued charges will be increased by Rs 2,820.00
2.14 Over Statement of Creditors Instead of settling the creditor Victorinus Eletricals in 2010 maintenance of building has been debited with Rs 1,800.	Profit of year 2010 will be increased by Rs.1,800.00	Creditors balance will be reduced by Rs. 1,800.00
2.15 M J N K Egodawella balance due According to Board meeting No 11/2011 dated 22/11/2011 under item No 5.2 ,board of directors have granted the permission to write off the balance due from the former employee Mr M J N K Egodawella	Profit of year 2009 will be reduced by Rs.6,824.33	Debtors balance will be reduced by Rs.6,824.33
2.16 Tsunami loan balance In the year 2008, B K A U Rodrigo's deduction for Tsunami loan installment deducted for the month of January 2008 has been erroneously credited the salaries account now corrected.	Profit before 2009 will be reduced by Rs 1,569.00	Loan balance will be reduce by Rs 1,569.00
2.17 Provision Of Salary Areas Payable Due To Amalgamation of Staff Provision of salary areas payable due to amalgamation of staff restructuring of staff according to DMS 30	Loss for the year 2010 will be increase by Rs 1,500,000.00	Provision of salary arrears payable will be increase by Rs 1.5m
2.18 Salary Reversal for 2010 Salary reversal for 2010 has not been done for Mr G M Aponsu	Profit of 2010 will be Increase by Rs 6,390.00	Employees Loan Balance will be increase by Rs 6,390.00

	Balance B/f before 1/1/2010	Profit for the year 2010
Balance b/f	(109,765,381.89)	(3,902,793.73)
2.1	(76,000.00)	
2.2	(201,088.00)	
2.3		(849,078.00)
2.4		(5,555.00)
2.5	(841,821.10)	
2.6	659,179.77	28,568.75
2.7	(57,750.10)	(28,875.05)
2.8	55,233.70	
2.9	2194.52	
2.10	57,809.78	
2.11	5,000.00	
2.12	32,812.50	
2.13	(2,820.00)	
2.14		1,800.00
2.15	(6,824.33)	
2.16	(1,569.00)	
2.17		(1,500,000.00)
2.18		6,390.00

3.Provision for Non moving & Damage stock

In the year of 2011 non moving stocks have been increased by Rs 1,842,849.57

4. Cash equivalent not available for the use of Centre

Call deposit certificate No C/33734579-507908 is kept against bank guarantee issued by Bank of Ceylon Ja-ela ,for a amount of Rs 75,000/ in favors of Toyota Lanka (Pvt) Ltd

10. Cash Flow Statement for the Year 2011

NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANKA

CASH FLOW STATEMENT FOR THE YEAR ENDED 31ST DECEMBER 2011

Figurs in Rs

	2011	2010
Net cash flows from operating activities		
Surplus/ (deficit) from ordinary activities	(24,792,432.34)	(6,249,543.03)
Non- cash movements		
Depreciation	72,450,217.17	70,081,492.39
Increase in provision for bad debts	430,200.88	(169,328.92)
Increase/(decrease) in payables	3,770,834.24	(6,061,644.98)
Increase /(decrease) in borrowings	14,355,132.80	(16,543,021.63)
Increase/(decrease) in relating to employee costs	4,984,076.00	1,389,352.50
(Gains)/losses on sale of property, plant and equipment	51,999.00	1,394.24
(Increase)/decrease in other current assets	2,265,350.96	1,709,431.64
Increase in investments due to revaluation	482,335.71	-
(Increase)/decrease in receivables	(15,526,354.56)	(5,935,964.36)
Prior years adjustment		(375,642.26)
Net cash flows from operating activities	58,471,359.86	37,846,525.59
CASH FLOW FROM INVESTMENT ACTIVITIES		
Purchase of plant & equipment	(64,906,956.18)	(30,302,209.27)
Proceeds from sales of equipment	(52,000.00)	(4,375.00)
Net cash flows from investment activities	(64,958,956.18)	(30,306,584.27)
CASH FLOW FROM FINANCING ACTIVITIES		
Capital grant	82,257,610.40	34,308,000.00
Transferred to Research Income	(10,337,000.00)	
Transferred to differed income	(64,883,663.18)	(31,300,437.79)
Net cash flow from financing activities	7,036,947.22	3,007,562.21
Net increase/(decrease) in cash & cash equivalents	549,350.90	10,547,503.53
Cash & cash equivalent at beginning of the period	79,563,825.31	69,016,321.78
Cash & cash equivalent at end of the period	80,113,176.21	79,563,825.31

11. Statement of Financial Position as at 31st December 2011

NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANKA

STATEMENT OF FINANCIAL POSITION AS AT DECEMBER 31,2011

	NOTE	2011	2010
ASSETS			
Current Assets			
Cash and cash equivalents	1	80,113,176.21	79,563,825.31
Trade & Other Receivables	2	83,503,351.38	68,407,197.70
Inventories / Stocks	3	10,638,407.59	12,772,034.40
Pre -Payments	4	173,933.14	305,657.29
		174,428,868.32	161,048,714.70
Non -Current Assets			
Property Plant & Equipment	5	445,408,927.96	437,710,830.60
Other Financial Assets	6	51,209,802.44	66,451,159.79
		496,618,730.40	504,161,990.39
Total Assets		671,047,598.72	665,210,705.09
LIABILITIES			
Current Liabilities			
Payables	7	18,736,247.89	16,046,851.04
Accrued Expenses	8	11,245,634.63	10,164,197.24
		29,981,882.52	26,211,048.28
Non -Current Liabilities			
Deferred Income	9	170,212,660.26	155,857,527.46
Provision for gratuity	10	62,717,094.25	57,733,018.25
		232,929,754.51	213,590,545.71
Total Liabilities		262,911,637.03	239,801,593.99
Total Net Assets		408,135,961.69	425,409,111.10
NET ASSETS/EQUITY			
Accumulated Fund	11	408,135,961.69	425,409,111.10
Total Net Assets/Equity		408,135,961.69	425,409,111.10

Eng. D R Pullaperuma		
Chairman	Director General	Finance Manager

12. Statement of Financial Performance for the Year 2011

NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANKA

STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED DECEMBER 31, 2011

Values in Rs.

	Schedule No.	31/12/2011	Re stated 31/12/2010
Revenue			
Recurrent Grant	1	139,687,000.00	137,642,000.00
Differed Income	2	50,528,530.38	47,843,459.42
Other Income	3	24,098,577.70	23,942,329.75
Total Revenue		214,314,108.08	209,427,789.17
Expenses			
Personnel Emoluments	4	109,268,559.10	97,368,082.20
Travelling & Subsistence	5	1,039,292.92	419,229.63
Supplies & Consumables used	6	9,284,739.75	8,802,230.81
Maintenance	7	5,794,479.43	9,622,868.14
Contractual Services	8	16,666,909.25	13,808,572.14
Research & Development Expenses	9	20,398,056.28	13,920,753.65
Depreciation	10	72,450,217.17	70,081,492.39
Other Operating Expenses	11	4,079,157.46	1,487,146.99
Finance Cost	12	125,129.06	166,956.25
Total Expenses		239,106,540.42	215,677,332.20
Surplus/(deficit) for the period		(24,792,432.34)	(6,249,543.03)

13. Statement of Changes in Net Assets as at 31st December 2011

NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANKA

11 .STATEMENT OF CHANGES IN NET ASSETS / EQUITY AS AT 31 ST DECEMBER 2011

Figurs 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 31.12.2010
Balance as at December 31, 2009 b/f	1,000,000.00	36,763,006.92	119,985,089.87	349,743,581.49	(110,141,024.15)	397,350,654.13	403,690,371.84
Received for the year 2010		34,308,000.00				34,308,000.00	11,940,000.00
Increase in revaluation reserve						-	
Total recognize Performances for the Year 2010					(6,249,543.03)	(6,249,543.03)	(18,279,717.71)
Transferred to Differed Income account							
Re Stated Balance as at December 31, 2010 c/f	1,000,000.00	71,071,006.92	119,985,089.87	349,743,581.49	(116,390,567.18)	425,409,111.10	397,350,654.13
Previous Year adjustments					(0.00)	(0.00)	
Capital Grant transferred to differed income		(64,883,663.18)				(64,883,663.18)	
Research Grant transferred to Income		(10,337,000.00)				(10,337,000.00)	
Capital Grant Received for the year 2011		82,257,610.40				82,257,610.40	34,308,000.00
Revaluation Surplus/(Deficit)				482,335.71	-	482,335.71	
Total recognize Performances for the Year					(24,792,432.34)	(24,792,432.34)	(6,249,543.03)
Balance as at December 31, 2011c/f	1,000,000.00	78,107,954.14	119,985,089.87	350,225,917.20	(141,182,999.52)	408,135,961.69	425,409,111.10

14. 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 2011

EL/F/NERD/FA/2011 8 June 2012

The Chairman
National Engineering Research and Development Centre of Sri Lanka

Report of the Auditor General on the Financial Statement of the National Engineering Research and Development Centre of Sri Lanka .for the year ended 31 December 2011 in terms of Section 14(2)(c) of the Finance Act, No. 38 of 1971.

The audit of financial statements of the National Engineering Research and Development Centre of Sri Lanka for the year ended 31 December 2011 comprising the balance sheet as at 31 December 2011 and the income statements, statement of changes in equity and cash flow statement for the year then ended and a summary of significant accounting policies and other explanatory notes 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 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 28 March 2012.

1:2 Management's Responsibility for Financial Statements

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

1:3 Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards. Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgments, including the assessment of the 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 power to the Auditor General to determine the scope and the extent of the audit.

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

1:4 Basis for Qualified Opinion

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

2. Financial statements

2:1 Opinion

In my opinion, except for the effects of the matters described in paragraph 2:2 of this report, the financial statements give a true and fair view of the financial position of the National Engineering Research and Development Centre of Sri Lanka as at 31 December 2011 and its financial performance and cash flows for the year then ended in accordance with Sri Lanka Accounting Standards.

2;2 Comments on Financial Statements

2:2:1 Sri Lanka Accounting Standards

The following non-compliances were observed.

(a) Contrary to Standard 9, fixed deposits amounting to Rs.5,239,980 over 03 months had been included under the cash and cash equivalents.

(b) Even though an allocation of Rs.62,717,094 had been made for the payment of employees' gratuity, that amount had not been invested.

2:2:2 Accounting Deficiencies

The following accounting deficiencies were observed.

(a) Consumable items amounting to Rs.952,160 purchases during the period 2006/2010 had been accounted for as fixed assets. The book value of this stock as at 31 December 2011 amounting to Rs.576,288 and action had not been taken even by the end of the year under review to rectify this matter or to write off from the books.

(b) Even though the Museum Construction Project completed in the year 2008 and 15 other projects relating thereto had been completed, action had not been taken for the capitalization of the sum of Rs.50,166,931 shown in the Work-in-progress Account over a long period.

(c) Even though seven deposit certificates of 07 day call deposits amounting to Rs.5,961,229 and 02 fixed deposit certificates valued at Rs.200,000 had been placed as Bank guarantees, it had not been disclosed in the financial statements.

(d) The value of machinery belonging to the NERD Centre amounted to Rs.111,770,056, a machine with repaired value of Rs.1,517,633 only had been revalued. Even though there was no basis for revaluing of the machine instead of revaluation by a committee, it had been revalued by the Head of the Division himself.

(e) The recurrent expenditure of Rs.77,027 incurred on painting of the Technology Park building had been debited to the Buildings Account.

2:2:3 Accounts Receivable and Payable

The following observations are made.

(a) The balance of the Trade and other Debtors Account as at 31 December 2011 amounted to Rs.11,403,421 and the balances old between 5 to 8 years amounted to Rs.5,542,695. In addition the balances old between 3 to 5 years and 1 to 3 years amounted to Rs.592,665 and Rs.618,261 respectively.

(b) The trade creditor balance amounting to Rs.2,060,329 included a balance of Rs.128,730 older than 4 years.

(c) The sum of Rs.5,130,260 receivable from the Hiriyala Economic Centre since the year 2004 and a sum of Rs.197,625 receivable from a private company had not been settled even by the end of the year under review.

(d) Advances amounting to Rs.10,837,474 obtained by the Centre from its customers for various projects remained without being settled over a number of years and it was observed as due to the non-issue of invoices or non-implementation of projects. This balance included balances older than 05 years amounting to Rs.67,500, balances old between 3 to 5 years amounting to Rs.496,498 and balances older than 01 year amounting to Rs.141,426.

(e) Even though a sum of Rs.807,818 had been allocated over a long period for the payment of gratuity to 24 employees who had resigned, action had not been taken to settle that amount or to write back to income.

2:2:4 Lack of Evidence for Audit

The evidence indicated against the following items of account had not been furnished to audit.

Item	Value	Evidence not made available
	Rs.	
Fixed Assets	444,965,739	Board of Survey Reports
Creditors	2,060,329	Confirmation of Balance from the parties concerned.
Debtors	11,403,421	
Seven Day call Deposits	5,961,229	Deposit Certificates
Fixed Deposits	200,000	

2:2:5 Non-compliance with Laws, Rules, Regulations and Management Decisions

The following non-compliances were observed.

	Reference to Laws, Rules, Regulations, etc.	Non-compliance
(a)	Financial Regulation 570	Even though deposits not claimed for more than 02 years from the date of deposit can be written back to income, action had not been taken to write back to income refundable deposits amounting to Rs.32,800.
(b)	Management Services Circular No. 39 of 26 May 2009 and the Public Enterprises Circular No. PED/12 of 02 June 2003 Paragraph 8.3.3	Even though the Centre had spent a sum of Rs.1,568,786 for the payment of incentive allowance in the year under review, the recommendation of the Salaries and cadre Commission and the approval of the Department of Management Services needed in accordance with the circulars referred to had not been obtained.
(c)	Public Finance Circular No. 438(2)(a)(i)(ii),(iii) and (iv) of 13 November 2009 and Financial Regulations 756, 756(4) and 771(2)	Even though the Centre had assets valued at Rs.6,136,266 for disposal, action in terms of paragraph 2 had not been taken thereon.

(d)	Public Enterprises Circular No. PD/25 of 29 June 2004 and the Public Finance Circular No. PF/PE/9 pf 27 June 2006.	A sum of Rs.2,600,748 had been invested in fixed deposits without the approval of the appropriate Minister and the concurrence of the Minister of Finance.

2:2:6 Transactions not supported by Adequate Authority

The approval of the Board of Directors had not been obtained for the investment of a sum of Rs.64,809,474 deposited by the Customers with the Centre for the implementation of various projects, in seven day call deposits from the year 2004.

3. Financial and Operating Review

3:1 Financial Results

According to the financial statements presented, the working of the Centre for the year ended 31 December 2011 had resulted in a deficit of Rs.24,792,432 as compared with the corresponding deficit of Rs.6,249,543 for the preceding year. As such the deficit in the financial results for the year under review indicated an increase of Rs.18,542,889. The main reasons for this had been the increase of Rs.12 million in personal emoluments and the increase of the research and development expenditure by a sum of Rs.6 million.

4. Operating Review

4:1 Performance

The following observations are made.

(a) Civil Division

(i) According to the Action Plan for the year 2011, estimates for Rs.2,940,000 had been prepared for 12 projects expected to be implemented by the Civil Divisions and those projects had not been commenced in the year2011.

(ii) According to the Action Plan, the Civil Division was expected to earn a sum of Rs.8,800,000 from conducting skills training programmes and a sum of Rs.10,000,000 by the implementation of Low Cost Technology Housing Projects during the year under review. The expected income had not been received as those projects had not been implemented.

(b) Technology Marketing Division

	Target	Non-achievement of Target
(i)	Appointment of 80 House Planning Technicians Island-wide.	Planning Technicians had not been appointed.
(ii)	Conduct of 06 Awareness Programmes at Vidatha Centres.	Awareness Programmes had not been conducted.
(iii)	Conduct of 04 Training Programmes in Vidatha Centres.	Training Programmes had not been conducted.
(iv)	Participate in 10 Vidatha Exhibitions.	Not participated at exhibitions.
(v)	Conduct of Awareness Programmes for the officers of Vidatha Resources Centres.	Awareness Programmes had not been conducted.
(vi)	Engineering Museum	
	Providing Children's Park Facilities Modernization of Museum Lecture Hall.	Construction work not commenced Modernization work not carried out.
	Preparation of a Leaflet on Instructions for the Museum and opening of the Lecture Hall.	Leaflet of instruction had not been prepared. Opening had not taken place.

(c) Agricultural and Post Harvest Damage Division

Target	Non-achievement of Target
Improvement of Cold Room operated with biofuel.	The objective of the project had been the construction of a biofuel cold room for the preservation of food but it had not been commenced.
Use of biofuel for improvement of Mushroom Industry.	This project estimated at Rs.433,343 had not been commenced.
Introduction of a machine for application of fertilizers to coconut cultivations.	It was observed that the machine assembled at a cost of Rs.248,912 was not suitable for the purpose.

Popularizing one wheel tractor.	Even though a projector to be popularized in the North and East had been implemented at a cost of Rs.424,308 it had not been successful.
Inventory a hydraulic machine for stressing steel rods for Precast Yards.	Even though the machine had been made at a cost of Rs.770,792 it had not been operated up to date.

(d) Renewable Energy Division

Target	Non-achievement of Target
Improvement of medium size heater operated with biofuel.	Project had not been commenced.
Creation and improvement of an incinerator for harmful waste and hospital waste.	Work on the project had not been commenced.
Conversion of a diesel fired tea dryer kiln to a dendro fired operation. Creation of timber chipping machine.	- do -

4:2 Management Inefficiencies

The following observations are made.

(a) Operation of an electricity generating system using wood as fuel and connection of electricity generated to the National Grid

(i) The objective of the project was to operate an electricity generation system using wood as fuel and connection of electricity generated to the National Grid with a view to minimizing the expenditure on electricity. The Project commenced in the year2004 and implemented in two stages, had spent a sum of Rs.32,913,440 by 31 December 2011. Nevertheless, the objectives of the Project had not been achieved up to date.

(ii) The electricity generation system had been repaired in the first quarter of the year under review and the electricity generated in November had been connected to the National Grid on test basis. The daily cost of generation of electricity amounting to Rs.24,480 was very high. Even though the Chairman of the Centre informed the audit that a income of Rs.33,300 could be earned per day by connecting the electricity generated to the National Grid, there was no agreement or other document confirming that position.

(iii) The Value Added Tax amounting to Rs.29,358,044 which could have been obtained by the NERD Centre as a reimbursement from the Department of Inland Revenue remained without being obtained over a long period.

(b) Non-achievement of Expected Results from Projects

Project	Expenditure Incurred	Observations
	Rs.	
Construction of a Biogas generator for the Elders' Home at Saliyapura.	1,898,088	The objective of generating biogas had not been achieved.
Minimizing damage caused in the transport of Plantains.	855,782	Even though the objective of the project was the production of bag to minimize the damage caused in the transport of plantains, the bag produced for the purpose had not been popular among the farmers.

(c) Even though cost of 04 projects commenced in the years 2007 and 2010 amounting to Rs.2,637,857 had been written off from accounts as research expenditure, the expected results of the projects had not been achieved. Certain projects had been temporarily abandoned and had not been properly finalized.

(d) Even though 801 samples had been handed over to obtain the performance test certificate under paragraph 4.5 of the Sri Lanka Standards on the electric lamp Nos. 2002:1231 and 2002 :1225 issued after passing the life period of 2,000 hours, only 02 performance certificates had been issued.

(e) Eve though 338 electric lamps had been handed over to the NERD Centre for testing the standards, performance reports had been issued for 14 only.

(f) Delays ranged from 4 to 19 months in the issue of invoices for samples of the Sri Lanka Standards Institute which is the main customer for obtaining test reports on electric lamps.

(g) A clerk recruited to the Centre on contract basis had been dismissed from service in the year 2007 due an act of indiscipline. According to the judgment of a case filed in the Labour Tribunal by that officer the Centre had to pay a sum of Rs.587,406 as compensation for the period from the date of dismissal to the date of reinstatement and to reinstate the officer. In this instance the contract period of the employee recruited on contract basis from 01 September 2000 up to the dismissal on 20 August 2007, had been extended continuously on annual basis. The Chairman informed that it was not due to a weaknesses in the management but the compensation had to be paid in accordance with the judgment.

(ii) The Centre had recruited a Legal Consultant to provide legal advice to the institution and the Centre had to pay compensation despite the availability of a Legal Consultant. A sum of Rs.1,179,000 had been paid to the Legal Consultant for legal advice in addition to the case costs from the year 2004 to the end of the year under review. The payment made for the year under review itself amounted to Rs.153,000.

(h) A sum of Rs.2,290,988 received in connection with the breach of bonds by an officer of the Centre had been invested in seven day call deposits. The attention had not been paid for the investment of surplus cash in fixed deposits which yield better benefits.

(i) The balance of the Grants/ Honorariums Allocation Account as at 31 December 2011 amounted to Rs.1,083,995. The Research and Development Honorariums/ Grants awarded to the Engineers annually had not been awarded the years 2010 and 2011.

(j) A sum of Rs.5,555 had been paid by the Centre as the clients had not paid the Withholding Tax.

4:3 Identified Losses

The following matters were observed

(a) An employee of the Centre had filed a case against the Centre due to an error made by the administration and a sum of Rs.587,406 had to be paid in the year under review as compensation to that employees. Action had not been taken to fix the responsibility on the officers responsible in this connection.

(b) An examination of the commercial projects completed in the year under review revealed that the Centre had incurred a loss of Rs.440,165 in the implementation of 07 projects. Expenditure exceeding the income from the projects had been incurred.

(c) The Chairman informed that the overpayment of Rs.57,176 made in the payment of salaries converted according to the conversion of salaries under DMS/30 in the year 2006 will be recovered in installments.

4:4 Uneconomic Transactions

The following matters were observed.

(a) A contract valued at Rs.5,370,965 had been entered into with the Ministry of Technology and Research in the year 2010 for the construction of the Vidatha Centre at Kopay. The construction work had been abandoned after spending a sum of Rs.448,343 on the project.

(b) Even though a training programme had been conducted in the year under review at a cost of Rs.110,100 for the introduction of Systems Certificates (ISO-9001) to the Centre, the ISO-9001 Certificate had not been obtained. As such that expenditure was observed in audit as an uneconomic expenditure.

(c) Even though the work on 14 projects costing Rs.11,283,085 commenced in the years 2008, 2009 and 2010 had been completed in the year under review, the final reports on the projects had not been submitted. Successful results had not been achieved from certain projects and steps had been taken to commence those failed project again as new projects. It was observed in audit as an inappropriate action.

4:5 Idle and Underutilized Assets

Out of the general stocks as at 31 December 2011, the non-moving stocks representing 40 per cent valued at Rs.5,815,981 and damaged stocks valued at Rs.320,285 had been idling in the stores over a period exceeding 07 years.

4:6 Release of Resources of the Centre to other Government Institutions

The following matters were observed.

(a) It had been agreed to utilize the labour and overhead expenses of the NERD Centre for the construction of a Vidatha Centre in the Karaveddi area for the Ministry of Technology and Research and the estimated expenditure amounted to Rs.3,194,626. The estimate for he traveling expenses and subsistence allowances of the officers and labourers amounted to Rs.930,450 whereas the actual expenditure incurred amounted to Rs.1,957,358 and that represented an increase of 100 per cent of the estimated amount.

(b) The agreement entered into with the Ministry did not include the expenditure to be borne by the NERD Centre.

4:7 Human Resources Management

Even though engineering research is the main objective of the Centre, 38 posts approved for the execution of that activity remain vacant.

Post			Approved Cadre	Actual Cadre	Vacancies
Research Students			05	03	02
Chief Research Engineers			13	08	05
Senior Research Engineers			16	01	15
Research Engineers			21	15	06
Curator	-	Technology Posts	01	--	01
	-	Museum	01	--	01
	-	Maintenance	01	-	01
	-	Factory	01	-	01
Technical Officers			05	02	03
Technical Assistant			15	12	03

5. Accountability and Good Governance

5:1 Internal Audit

The following observations were made.

(a) According to paragraph 07 of the Management Audit Circular No. DMA /2009(i) dated 09 June 2009, the Annual Audit Plan prepared should cover the activities of all areas such as the annual estimates, Action Plan, and the budget proposals, but it had not been so prepared.

(b) According to paragraph 07 of the above circular, in addition to the financial audit, the Internal Audit should pay special attention to systems analysis, performance analysis and the special investigations in order to ensure an effective performance by the institution but attention had not been paid to those areas.

5:2 Internal control

All activities under Project ELE/COM/59/11 of the NERD Centre such as, receipt of imported motor vehicle battery samples, preparation of work orders, invoicing, testing preparation of reports, issue of reports and the return of samples had been done by one officer. As such action had not been taken to maximize the income received and to prevent any probable errors.

5:3 Audit and Management Committee

The following matters were observed.

(i) Even tough the Audit Committee should meet at lease once in 03 months in terms of Section 7.4.1 of the Public Enterprises Circular No. PED/12 of 02 June 2003, only 03 meetings had been held in the year under review.

(ii) According to paragraph 5 of the Public Enterprises Circular No. 55 of 14 December 2010, it is essential to obtain the services of a representative of the Auditor General' Department. Nevertheless such representative had not been invited to participate in the meetings.

6. Systems and Controls

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

(a) Project Costing and Management
(b) Debtors and Creditors

H.A.S. Samaraweera
Auditor General

15. Observations of the Board of Directors for the Report of the Auditor General on the Financial Statements of the National Engineering Research & Development Centre of Sri Lanka for the year ended 31 December 2011

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 2011 in terms of Section 14(2)(c) of the Finance Act, No. 38 of 1971.

The under mentioned headings and sub-headings in this are referred to the letter of Auditor General dated 08/06/2012.

2.2 Comments on Financial Statements

2.2.1 Sri Lanka Accounting Standards

(a) Contrary to Standard 9, fixed deposits amounting to Rs.5,239,980/= over 03 months had been included under the cash and cash equivalents.

Agreed, however, as per the Standard No.9, from the year 2012 onwards, arrangements would be made not to show the deposits exceeding 03 months under the cash and cash equivalent.

(b) Even though, an allocation of Rs.62,717,094/= had been made for the payment of employees' gratuity, that amount had not been invested.

Agreed, we receive required funds from the Treasury to pay gratuity for the employees as and when required. As such, there is no possibility of investing such funds separately. You had shown the same matter even previously and we have given same explanation each time.

2.2.2 Accounting Deficiencies

(f) Consumable items amounting to Rs.952,160/= purchases during the period 2006/2010 had been accounted for as fixed assets. The book value of this stock as at 31 December 2011 amounting to Rs.576,288/= and action had not been taken even by the end of the year under review to rectify this matter or to write off from the books.

Agreed, under the Item No.3.3 of the Minutes of the Board Meeting No.3-2012, the Management would be updating the Fixed Assets Register after an analysis of the fixed assets. Further, once the Evaluation Committee thus appointed by the Management gives its firm recommendations, arrangements would be made to write off such items from the fixed assets.

(g) Even though, the Museum Construction Project completed in the year 2008 and 15 other projects relating thereto had been completed, action had not been taken for the capitalization of the sum of Rs.50,166,931/= shown in the Work-in-progress Account over a long period.

Agreed, as, the establishment of the Museum is in progress in the year 2012; arrangements would be made to capitalize it in the year 2012.

(h) Even though, seven deposit certificates of 07 day call deposits amounting to Rs.5,961,229/= and 02 fixed deposit certificates valued at Rs.200,000/= had been placed as Bank guarantees, it had not been disclosed in the financial statements.

Agreed, a sum of (Rs.5,961,229/= + Rs.200,000/=) of deposit certificates have been placed as a security guarantee as given below.

I. A Performance Bond No.3/2011 for a sum of Rs.1,126,000/= has been secured.

A Letter of Guarantee No.16/2011 for a sum of Rs.4,504,000/=, in sake of a 20% of mobilization advance from the Ministry of Health for the construction of Nurses' Quarters at Pollonnaruwa.

II. A letter of guarantee has been secured for a sum of Rs.75,000/= for Toyota Lanka Pvt. (Ltd.)

(This declaration has not been made in the Financial Statements.)

For the above bonds, seven deposit certificates of 07 day call deposits amounting to Rs.5,961,229/= and 02 fixed deposit certificates valued at Rs.200,000/= had been placed as Bank guarantees.

(i) The value of machinery belonging to the NERD Centre amounted to Rs.111,770,056/=, a machine with repaired value of Rs.1,517,633/= only had been revalued. Even though, there was no basis for revaluing of the machine instead of revaluation by a committee, it had been revalued by the Head of the Division, himself.

Agreed, when this machine was being repaired, its value had been zero. Accordingly, after repairing the machine, and according to the recommendations of Head of Dept., who has expert knowledge in the same machine, it was revalued. To revalue the other machinery at the NERDC, a Committee has already been appointed.

(j) The recurrent expenditure of Rs.77,027/= incurred on painting of the Technology Park building had been debited to the Buildings Account.

To rehabilitate the buildings at Technology Park, a painting had to be done. The required money for this was spent from the capital building rehabilitation allocation under the capital budget approved by the Treasury. Therefore, it has been debited to the Building Account.

2.2.3 Accounts Receivable and Payable

(a) The balance of the Trade and the other Debtors Account as at 31 December 2011 amounted to Rs.11,403,421/= and the balances old between 5 to 8 years amounted to Rs.5,542,695/=. In addition, the balances old between 3 to 5 years and 1 to 3 years amounted to Rs.592,665/= and Rs.618,261/= respectively.

Agreed, confirmation letters for outstanding balances up to 31/12/2011 were sent to the Trade Debtors on 27/01/2012 with copies to the Auditors. But, no one has sent back the confirmation of the outstanding balance by return mail (a copy attached to our letter.) Confirmation of the debts is outside the control of the Centre.

(b) The trade creditor balance amounting to Rs.2,060,329/= included a balance of Rs.128,730/= older than 4 years.

Agreed, the amount of Rs.118,430.28, which exceeded 4 years would be accounted after obtaining the approval of Members of BoDs. during the year 2012. Remaining Rs.10,300/= has not been paid, due to the Trade Creditors not having submitted the original cash receipts. Arrangements

would be made to enter them into the proper accounts, after obtaining approval of the Members of BoDs. in the year 2012.

(c) The sum of Rs.5,130,260/= receivable from the Hiriyala Economic Centre since the year 2004 and a sum of Rs.197,625/= receivable from a private company had not been settled even by the end of the year under review.

Agreed, this would be resolved during this year.

(d) Advances amounting to Rs.10,837,474/= obtained by the Centre from its customers for various projects remained without being settled over a number of years and it was observed as due to the non-issue of invoices or non-implementation of projects. This balance included balances older than 05 years amounting to Rs.67,500/= balances old between 3 to 5 years amounting to Rs.496,498/= and balances older than 01 year amounting to Rs.141,426/=.

Agreed, the advance payment of Rs.67,500/=, which exceeded 5 years, has been for the construction of a water tank for the Water Supply and Drainage Board at Ratnapura. The project was commenced in the year 2006, the estimated cost of this was Rs.90,000/= and out of it, 75% of payment has already been paid. Although, the balance payment was requested, there had not been any responses in this regard. However, according to the work done, arrangements would be made to invoice the advance payments in the year 2012.

Also, special attention would be drawn to the other advances and arrangements would be made to resolve them, too.

(c) Even though, a sum of Rs.807,818/= had been allocated over a long period for the payment of gratuity to 24 employees who had resigned, action had not been taken to settle that amount or to write back to income.

Such employees would be informed accordingly in the year 2012 and arrangements would be made to pay them or to take them as income to the NERDC.

2.2.4 Lack of Evidence for Audit

Item	Value (Rs.)	Evidence not made available
Fixed Deposits	444,965,739/=	Board of Survey Reports
		Agreed, at the time of auditing, the Inspection Report was being prepared and hence could not be given to audit. Presently, this report is available with us.

Creditors - 2,060,329/= Debtors - 11,403,421/=		Confirmation of Balance from the parties concerned. ***Relevant parties have not confirmed the outstanding payments to us.***
Seven day call deposits – 5,961,229/= Fixed deposits - 200,000/=		Deposit Certificates ***Agreed, arrangements would be made to get a report on confirmation.***

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

(a)	Financial Regulation 570	Even though, deposits not claimed for more than 02 years from the date of deposit can be written back to income, action had not been taken to write back to income refundable deposits amounting to Rs.32,800/=.

Agreed, as per the decision of Members of BoDs., the prevailing practice has been for the deposits not claimed for a period exceeding 5 years, only to be taken as an income to the NERDC. However, as per the audit observation, action would be taken to present F R No.570 to the Members of BoDs. for their attention.

(b)	Management Services Circular No. 39 of 26 May 2009 and the Public Enterprises Circular No. PED/12 of 02 June 2003 Paragraph 8.3.3	Even though, the Centre had spent a sum of Rs.1,568,786/= for the payment of incentive allowance in the year under review, the recommendation of the Salaries and Cadre Commission and the approval of the Department of Management Services needed in accordance with the circulars referred to had not been obtained.

The MSD Circular No.39 is defined for the revision of salaries and the other payments, but not for the matters indicated herein. But, since 1999, the incentives have been paid by the NERDC under the approvals of Members of BoDs.

(c)	Public Finance Circular No. 438(2)(a)(i)(ii),(iii) and (iv) of 13 November 2009 and Financial Regulations 756, 756(4) and 771(2)	Even though, the Centre had assets valued at Rs.6,136,266/= for disposal, action in terms of paragraph 2 had not been taken thereon.

Agreed, arrangements would be made to dispose any such items off the stocks during the year 2012 according to the recommendations by the HoDs./Directors.

(d)	Public Enterprises Circular No. PD/25 of 29 June 2004 and the Public Finance Circular No. PF/PE/9 of 27 June 2006.	A sum of Rs.2,600,748/= had been invested in fixed deposits without the approval of the appropriate Minister and the concurrence of the Minister of Finance.

Agreed, these deposits have been accrued from time to time since 1985. Arrangements would be made to transfer such money in the fixed deposits to be deposited in the Temporary Investment Excess Deposits in the Government Institutions with the relevant approvals.

2.2.6 Transactions not supported by Adequate Authority

The approval of the Board of Directors had not been obtained for the investment of a sum of Rs.64,809,474/= deposited by the Customers with the Centre for the implementation of various projects, in seven day call deposits from the year 2004.

Agreed, approval of the Members of BoDs. was obtained for these deposits under the Item No.6.1 of the minutes, Board Meeting No.2-2012.

3. Financial and Operating Review

3.1 Financial Results

According to the financial statements presented, the working of the Centre for the year ended 31 December 2011 had resulted in a deficit of Rs.24,792,432/= as compared with the corresponding deficit of Rs.6,249,543/= for the preceding year. As such, the deficit in the financial results for the year under review indicated an increase of Rs.18,542,889/=. The main reasons for this had been the increase of Rs.12 million in personal emoluments and the increase of the research and development expenditure by a sum of Rs.6 million.

Agreed.

4. Operating Review

4.1 Performance

(c) Civil Division

(i) According to the Action Plan for the year 2011, estimates for Rs.2,940,000/= had been prepared for 12 projects expected to be implemented by the Civil Divisions and those projects had not been commenced in the year2011.

(ii) According to the Action Plan, the Civil Division was expected to earn a sum of Rs.8,800,000/= from conducting skills training programmes and a sum of Rs.10,000,000/= by the implementation of Low Cost Technology Housing Projects during the year under review. The expected income had not been received as those projects had not been implemented.

(d) Technology Marketing Division

	Target	Non-achievement of Target
(i)	Appointment of 80 House Planning Technicians Island-wide.	Planning Technicians had not been appointed.
(ii)	Conduct of 06 Awareness Programmes at Vidatha Centres.	Awareness Programmes had not been conducted.
(iii)	Conduct of 04 Training Programmes in Vidatha Centres.	Training Programmes had not been conducted.
(iv)	Participate in 10 Vidatha Exhibitions.	Not participated at exhibitions.
(v)	Conduct of Awareness Programmes for the officers of Vidatha Resources Centres.	Awareness Programmes had not been conducted.
(vi)	Engineering Museum	
	Providing Children's Park Facilities Modernization of Museum Lecture Hall.	Construction work not commenced Modernization work not carried out.
	Preparation of a Leaflet on Instructions for the Museum and opening of the Lecture Hall.	Leaflet of instruction had not been prepared. Opening had not taken place.

(c) Agricultural and Post Harvest Damage Division

Target	Non-achievement of Target
Improvement of Cold Room operated with bio-fuel.	The objective of the project had been the construction of a bio-fuel cold room for the preservation of food but it had not been commenced.
Use of bio-fuel for improvement of Mushroom Industry.	This project estimated at Rs.433,343/= had not been commenced.
Introduction of a machine for application of fertilizers to coconut cultivations.	It was observed that the machine assembled at a cost of Rs.248,912/= was not suitable for the purpose.

Popularizing one wheel tractor.	Even though, a projector to be popularized in the North and East had been implemented at a cost of Rs.424,308/=, it had not been successful.
Inventory a hydraulic machine for stressing steel rods for Precast Yards.	Even though, the machine had been made at a cost of Rs.770,792/=, it had not been operated up to date.

(d) Renewable Energy Division

Target	Non-achievement of Target
Improvement of medium size heater operated with bio-fuel.	Project had not been commenced.
Creation and improvement of an incinerator for harmful waste and hospital waste.	Work on the project had not been commenced.
Conversion of a diesel fired tea dryer kiln to a Dendro fired operation. Creation of timber chipping machine.	- do -

The Action Plan for the Year 2011 has been prepared with the intention of recruiting all the required Research Engineers and the Supportive Staff. But, it has not been able to recruit Senior Research Engineers and the Supportive Staff. Although, applications were called for the Senior Research Engineers, no application had been received. Also, 2 Research Engineers out of 11 Research Engineers recruited had already left the Centre. Also, 3 Engineers had retired during the year 2011. According to the approved cadre, there should be 56 Research Engineers (Engineers and the Scientists) but as at 2011 there exists only 31 Engineers. As per the on-going difficulties faced when recruiting Research Engineers, approval of the DMS has been expected to recruit 7 Engineers in the MM 1-1 salary category, so as to not affect the on-going development activities related to research work (construction of buildings, to obtain research results.) As per the above, it is true that we have not been able to achieve the targets of action plans prepared by us.

Further, some items of the relevant plans, have been incorporated with a view to implement such along with the other Institutions, as an example, "Vidatha" programmes to be implemented by the Ministry of Technology and Research requires the contribution of NERDC. As such, based on the previous years' experiences, the NERDC has identified our contribution in our work plan. However, in the event, the Ministry or such other Institutions do not implement their plans as targeted by us, they might not require our contribution based specifically on our plans. Hence, the differences exist.

Similarly, some of our planned activities depend on our demand for services envisaged by the others. As examples, energy audits, provision of industrial services, provision of infra-structure facilities, provision of dies and moulds, etc. could be mentioned. The planned targets could not be achieved when there is a dearth of demand. Also, demands rise; the NERDC has to perform work beyond the targeted amount.

Further, as per a decision taken by the Management to bring in performance efficiency, the Management had given new targets exceeding that given by the HoDs/Directors/Officers in the preparation of performance. This was a step, actually to encourage the officers concerned to perform better. However, when carrying out the review of performance, the non-achievement of such high targets has been an item under criticism.

At the same time, the project work encounters uncertainty; and as such, sometimes changes of plans are inevitable. All in all, it must be stressed that expected targets of R&D projects are usually not achievable due to nature of such projects.

4.2 <u>Management Inefficiencies</u>

(f) Operation of an electricity generating system using wood as fuel and connection of electricity generated to the National Grid

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(i) The objective of the project was to operate an electricity generation system using wood as fuel and connection of electricity generated to the National Grid with a view to minimizing the expenditure on electricity. The Project commenced in the year 2004 and implemented in two stages, had spent a sum of Rs.32,913,440/= by 31 December 2011. Nevertheless, the objectives of the Project had not been achieved up to date.

Does not agree, the objective of project was to establish the Gasifier Technology in Sri Lanka by producing electricity in an economical way using firewood and to show and demonstrate its ability to Technologists and the Entrepreneurs. It is obvious that we had reached the many achievements of this project.

(ii) The electricity generation system had been repaired in the first quarter of the year under review and the electricity generated in November had been connected to the National Grid on test basis. The daily cost of generation of electricity amounting to Rs.24,480/= was very high. Even though, the Chairman of the Centre informed the audit that an income of Rs.33,300/= could be earned per day by connecting the electricity generated to the National Grid, there was no agreement or the other document confirming that position.

The information has been possibly for the feasibility study based on the valuation done at the time.

(iii) The Value Added Tax amounting to Rs.29,358,044/=, which could have been obtained by the NERD Centre as a reimbursement from the Department of Inland Revenue remained without being obtained over a long period.

Agreed, this is a VAT refund accrued over the years from 2005 to 2012 based on the application made to the Department of Inland Revenue as per the information available with us. The Department of Inland Revenue had informed that in order to refund the money back to the NERDC, a VAT Audit should be carried out. We have already submitted the relevant information as per the letters sent by the Department of Inland Revenue dated 24/07/2008 and 26/8/2010, respectively. Further, we have sent officers to the Department of Inland Revenue at several occasions and we have emphasized this matter further by our correspondences on 11/11/2011, 07/09/2011, 03/03/2011, 15/03/2011, 11/05/2010, 15/03/2011, 30/11/2010 and 21/08/2008.

Further, there is a log entry to indicate that we have recorded such protest with the Deputy Commissioner of the same Department as per the amount due for - 2010/2011.

There is a continuous effort to resolve this matter with the Department of Inland Revenue.

(b) <u>**Not-achievement of Expected Results from Projects**</u>

Project	Expenditure Incurred	Observations
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	Rs.	
Construction of a Biogas generator for the Elders' Home at Saliyapura.	1,898,088/-	The objective of generating biogas had not been achieved.

Does not agree, the main objective of this project is to minimize the environmental pollution by the toilet wastes through an anaerobic digestion. These toilets complex is situated in a distributed area all over the land. As a result of this, only a certain amount of biogas is produced. However, the main achievements have been realized in addition to obtaining of a small amount of biogas.

Minimizing damage caused in the transport of Plantains.	855,782/-	Even though, the objective of the project was the production of bag to minimize the damage caused in the transport of plantains, the bag produced for the purpose had not been popular among the farmers.

Agreed, a suitable bag has been prepared as a pilot project and distributed among the selected farmers. However, the expected targets for popularizing could not be achieved due to the obstacles faced by social and economic consideration.

(e) Even though, cost of 04 projects commenced in the years 2007 and 2010 amounting to Rs.2,637,857/= had been written off from accounts as research expenditure, the expected results of the projects had not been achieved. Certain projects had been temporarily abandoned and had not been properly finalized.

The targeted results of the projects sometimes cannot be achieved; and in such cases, these projects are not continued beyond the stage, where the Management realizes such continuous expenditure might be wasteful.

(f) Even though, 801 samples had been handed over to obtain the performance test certificate under paragraph 4.5 of the Sri Lanka Standards on the electric lamp Nos. 2002:1231 and 2002:1225 issued after passing the life period of 2,000 hours, only 02 performance certificates had been issued.

Does not agree, 801 samples of lamps have been given to us not only to test the lifetime of 2000h but also for obtaining the other relevant laboratory reports. However, the SLSI had requested 2 reports specifically for testing the lifetime of 2000h and those 2 reports are the ones, which the Audit has traced.

(g) Even though 338 electric lamps had been handed over to the NERD Centre for testing the standards, performance reports had been issued for 14 only.

Does not agree, it is incorrect to state that the lamps have been referred for testing due to the said Work Orders had not been issued.

Due to the large number of lamps being received at the NERDC for testing, all cannot be tested as they are received and hence, they are not referred to the Laboratories for lamps testing. Although, a Technician has been allocated for the purpose of testing lamps, it is impossible to complete all the lamps given for testing. Hence, priority is being given for testing lamps according to the first comes, first served basis.

(f) Delays ranged from 4 to 19 months in the issue of invoices for samples of the Sri Lanka Standards Institute, which is the main customer for obtaining test reports on electric lamps.

There has been a delay in issuing invoices as, we have not received the money during this period.

(g) (i) A clerk recruited to the Centre on contract basis had been dismissed from service in the year 2007 due an act of indiscipline. According to the judgment of a case filed in the Labour Tribunal by that officer the Centre had to pay a sum of Rs.587,406/= as compensation for the period from the date of dismissal to the date of reinstatement and to reinstate the officer. In this instance, the contract period of the employee recruited on contract basis from 01 September 2000 up to the dismissal on 20 August 2007, had been extended continuously on annual basis. The Chairman informed that it was not due to a weakness in the Management but the compensation had to be paid in accordance with the judgment.

Agreed, this Accounts Clerk has been on contract basis since 1/9/2000.Whenever, contract extensions have been given, it has been the practice to break his service from time to time and this has been going-on up to 2007. Consequent to an alleged disciplinary violation carried by him, a formal disciplinary inquiry had been carried out by an External Officer. As per the outcome of this enquiry, his service has been terminated from the NERDC with effect from 20/08/2007. Thereafter that, the relevant Labour Union has filed a case against the above action in the Labour Court. The Court determining that the NERDC has acted wrongly when extending his terms of contract periods has given a judgment to reinstate him on permanent basis, with back wages.

(iii) The Centre had recruited a Legal Consultant to provide legal advice to the institution and the Centre had to pay compensation despite the availability of a Legal Consultant. A sum of Rs.1,179,000/= had been paid to the Legal Consultant for legal advice in addition to the case costs from the year 2004 to the end of the year under review. The payment made for the year under review itself amounted to Rs.153,000/=.

Although, the NERDC obtained the assistance of Department of Attorney General for legal advice before 2004, the issues faced by the NERDC in not having the same lawyer to appear for the same case had resulted losing some cases. Hence, considering the above bad experience faced by the NERDC, the Members of BoDs. decided to enter into an agreement with the experienced lawyer, who had previously given legal advice on the preparation of agreement for

the Technology Transfer, for legal matters at the Centre with effect from 01/01/2004. As, it was necessary to bring forward legal matters to the following year, his service was extended continuously on the basis of a monthly professional charge with the approval of Members of BoDs. However, as per recent decision taken by the Members of BoDs., payments are being made only for the advice obtained since 2012.

(h) A sum of Rs.2,290,988/= received in connection with the breach of bonds by an officer of the Centre had been invested in seven day call deposits. The attention had not been paid for the investment of surplus cash in fixed deposits, which yield better benefits.

Agreed, this money would be invested to yield better benefits in the State Institutions Temporary Surplus Trust Fund as a fixed deposit from the year 2012 after having the approval of the Members of BoDs.

(i) The balance of the Grants / Honorariums Allocation Account as at 31 December 2011 amounted to Rs.1,083,995/=. The Research and Development Honorariums / Grants awarded to the Engineers annually had not been awarded the years 2010 and 2011.

The Research and Development Honorariums / Grants would be given according to the results/outcomes of the projects. Projects would be evaluated according to the approved procedures and the and according to the accepted parameters. As, there were no successful projects meeting such standards during the last two years, the awards were not granted. This illustrates that the NERDC is not in a position to recruit Engineers with innovative capabilities. However, it is noted that this fund has been formed using the money received by our Research Engineers through the awards received by the Presidential Awards, Awards given by National Science Foundation, Awards given by Ministry of Technology & Research, and the Awards given by Sri Lanka Inventors Commission. Hence, action would be taken to reimburse such money to those award winning Research Engineers in the year 2012.

(j) A sum of Rs.5,555/= had been paid by the Centre as the clients had not paid the Withholding Tax.

It is noted that the withholding tax not paid by the client has been taken as an expenditure of the project with the approval of the Management.

4.3 Identified Losses

(d) An employee of the Centre had filed a case against the Centre due to an error made by the administration and a sum of Rs.587,406/= had to be paid in the year under review as compensation to that employees. Action had not been taken to fix the responsibility on the officers responsible in this connection.

Does not agree, this is not a fault of the Management, and this has been explained under the Item No.4.2 (g)(i).

(e) An examination of the commercial projects completed in the year under review revealed that the Centre had incurred a loss of Rs.440,165/= in the implementation of 07 projects. Expenditure exceeding the income from the projects had been incurred.

Agreed, all these projects had been at a loss due to assigning of many employees than that envisaged at the time of furnishing the proposal. Further, it is noted that the efficiency of the employees has gone down

influenced by the lack of Supervisors to supervise the work. Realizing the above, arrangements would be made to fill the vacancies of the Supervisors.

(f) The Chairman informed that the overpayment of Rs.57,176/= made in the payment of salaries converted according to the conversion of salaries under DMS/30 in the year 2006 will be recovered in installments.

The decision to recover a sum of Rs.57,176/= had been a Management decision and as such to receive back in installments would extend up to the year 2014.

4.4 Uneconomic Transactions

(d) A contract valued at Rs.5,370,965/= had been entered into with the Ministry of Technology and Research in the year 2010 for the construction of the Vidatha Centre at Kopai. The construction work had been abandoned after spending a sum of Rs.448,343/= on the project.

A programme has been initiated to construct "Vidatha" Buildings at Kopai and Karaveddi by the Ministry of Technology and Research. However, at the initial visit carried out to investigate sites for construction, the assistance and agreement received by the District Secretary of Kopai has not been adequate. This was informed to the Ministry of Technology and Research, and the construction of "Vidatha" Building at Kopai was temporarily suspended. The cost estimate for the preliminary work done during this visited has been indicated here. Accordingly, the manufactured pre-cast concrete components would be used for the other future projects and the related expenditure would be credited to the relevant projects.

(e) Even though, a training programme had been conducted in the year under review at a cost of Rs.110,100/= for the introduction of Systems Certificates (ISO-9001) to the Centre, the ISO-9001 Certificate had not been obtained. As such, that expenditure was observed in audit as an uneconomic expenditure.

Does not agree, it is incorrect to indicate that this training is uneconomical. This training was done as a preliminary step to establish ISO methodology to be implemented at NERDC.

(f) Even though, the work on 14 projects costing Rs.11,283,085/= commenced in the years 2008, 2009 and 2010 had been completed in the year under review, the final reports on the projects had not been submitted. Successful results had not been achieved from certain projects and steps had been taken to commence those failed projects again as new projects. It was observed in audit as an inappropriate action.

It is not fair to state that the project is uneconomical in the event, the expected project outcomes are not achieved. It should be pointed out that the knowledge gained by the staff from each and every stage of the research project would be an investment for the future activities of the Centre.

It is not compulsory to produce a final report at the end of each and every research project. However, on completion of some of the research projects, a research report has to be submitted within a given specific time period. It is noted that such research reports have not been received due to some Research Engineers leaving the Centre for good. However, to overcome this situation, a methodology has now been prepared.

4.5 Idle and Underutilized Assets

Out of the general stocks as at 31 December 2011, the non-moving stocks representing 40 per cent valued at Rs.5,815,981/= and damaged stocks valued at Rs.320,285/= had been idling in the stores, over a period exceeding 07 years.

It is noted that this non-moving stock has been created out of the goods purchased for the relevant researches from time to time. The values identified by the Audit are the bill values at the time of purchased. It should be noted that the present values of these items especially for electronic items are much below that of bill values. However, arrangements would be made to dispose the obsolete items after analyzing the total non-moving stocks and to store any non-moving goods, which could be used for future research activities.

4.6 Release of Resources of the Centre to the other Government Institutions

(c) It had been agreed to utilize the labour and overhead expenses of the NERD Centre for the construction of a Vidatha Centre in the Karaveddi area for the Ministry of Technology and Research and the estimated expenditure amounted to Rs.3,194,626/=. The estimate for the traveling expenses and subsistence allowances of the officers and labourers amounted to Rs.930,450/=, whereas the actual expenditure incurred amounted to Rs.1,957,358/= and that represented an increase of 100 per cent of the estimated amount.

The estimated cost for this building is Rs.7.9 m. According to the standards of ICTAD, the time period for construction of such a building is around 6 months. (ICTAD – Procurement Guidelines reference No.4.2.2.) Although, it was planned to commence this construction of the project in the month of January 2011, but owing to the heavy rains and the resulting floods in Northern District, the Provincial Council Elections, and the Sinhala and Hindu New Year Festival, the commencement of the work got delayed till 16th April 2011. Accordingly, it was decided to complete the work within the short period of 31/2 months although the planned time of the construction of the building was 6 months. Hence, arrangements had been made to have more employees and to work till late hours in fulfilling the obligation. Accordingly, an increase amount of money for travelling and overtime payments had to be incurred than that estimated.

(d) The agreement entered into with the Ministry did not include the expenditure to be borne by the NERD Centre.

Agreement was signed by the Ministry for the money to be paid to the NERDC by the Ministry. Therefore, the total expenditure incurred by the Centre has not been reflected in the agreement.

4.7 Human Resources Management

Even though, engineering research is the main objective of the Centre, 38 posts approved for the execution of that activity remain vacant.

Post			Approved Cadre	Actual Cadre	Vacancies
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Research Students			05	03	02
Chief Research Engineers			13	08	05
Senior Research Engineers			16	01	15
Research Engineers			21	15	06
Curator	-	Technology Posts	01	--	01
	-	Museum	01	--	01
	-	Maintenance	01	-	01
	-	Factory	01	-	01
Technical Officers			05	02	03
Technical Assistant			15	12	03

Although, the Centre has taken measures to recruit the required Research Engineering Staff and the Technical Staff, it has not been successful. It has been the past practice to advertise for the vacant Engineering positions at the NERDC as soon as the final year results are released from Universities. Similar arrangements to recruit Research Engineer have been adhered even during the year 2011. However, 4 of the Engineers out of 11 recruited at the time for the vacant Research Engineer positions have left the Centre for better prospects. Similarly, no application has been received for the post of Senior Research Engineer. We have observed at the main reason for not being able to retain Research Engineers is due to the low salary scales offered to Research Engineers and the Senior Research Engineers to commensurate to their qualifications. Further, the location of Centre being far away from Colombo is another reason for this issue.

It is observed that the number of Engineers applying for disciplines such as Civil Engineering and the Electrical & Electronic Engineering, which are the most relevant to the Centre at this point of time, are very few or non-existent. During the year 2011, there had been only one (01) Engineer has recruited for the Civil Engineering discipline and he too has resigned during the same year. In the case, Electrical and Electronic Engineering discipline, although 3 Engineers have been recruited, two (02) of them have already left the Centre. As per the above reason, we have not been able to progress research and development in these engineering disciplines. Further, as a result of our not being able to recruit Senior Research Engineers for the 15 vacancies existing in the middle level cadre, we find that the most needed guidance to carry out research and development for the younger Engineers is not available in the Centre. This is also one of the reasons for not been able to retain new Engineers at the Centre. You may note that the above reasons for not being able to recruit and retain Research Engineers is affecting the implementation of the Action Plans prepared by us.

5 Accounting and Good Governance

5.1 Internal Audit

(c) According to paragraph 07 of the Management Audit Circular No. DMA /2009(i) dated 09 June 2009, the Annual Audit Plan prepared should cover the activities of all areas such as the annual estimates, Action Plan, and the budget proposals, but it had not been so prepared.

Agreed, although, we have taken the total Action Plan as a whole in the preparation of the Annual Audit Plan, there is neither specific percentage

nor any selected items thus indicated in the plan. It is noted that the recommendations of the budget proposals – 2011 have not been taken into account per se, we shall be specific when preparing the next year Annual Audit Plan.

(d) According to paragraph 07 of the above circular, in addition to the financial audit, the Internal Audit should pay special attention to systems analysis, performance analysis and the special investigations in order to ensure an effective performance by the institution but attention had not been paid to those areas.

Agreed, from this year onwards, in addition to the financial audit, we should give special attention to system audits, performance audits and the special investigations.

5.2 Internal Control

All activities under Project ELE/COM/59/11 of the NERD Centre such as, receipt of imported motor vehicle battery samples, preparation of work orders, invoicing, testing preparation of reports, issue of reports and the return of samples had been done by one officer. As such, action had not been taken to maximize the income received and to prevent any probable errors.

Agreed, we have specific trained staff for the battery testing. Battery testing process could no longer be done by a single person.

Similarly, there is a process in-built to minimize errors in the battery testing procedure. Further, the reports are released only after an approved mechanism of supervision. However, during this period, since the Head of the Dept. was the only Engineer available in this Dept., these activities had been carried out by the Head of the Dept. Presently, a separate Technical Officer has been assigned to this specific work.

5.3 Audit and Management Committee

(h) Even tough, the Audit Committee should meet at least once in 03 months in terms of Section 7.4.1 of the Public Enterprises Circular No. PED/12 of 02 June 2003, only 03 meetings had been held in the year under review.

Agreed, we would comply with the Public Enterprises Circular No.PED/12 - Clause No.7.4.1 dated 2nd June 2003 from this year onwards.

(ii) According to paragraph 5 of the Public Enterprises Circular No. 55 of 14 December 2010, it is essential to obtain the services of a representative of the Auditor General's Department. Nevertheless, such representative had not been invited to participate in the meetings.

The NERDC has obtained the services of the Internal Auditor of the Ministry of Technology and Research to participate in the Audit and Management Committee Meetings, as an Observer, as per the Clause No.5 of the PED Circular No.55 dated 14th December 2010 from the year 2011 onwards.

Director General

Eng. D R Pullaperuma
Chairman