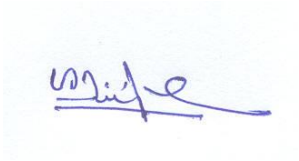
ACKNOWLEDGEMENT

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.



Eng. Anura Wijayapala
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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+ 94-011-5354597
+ 94-011-5354601

Fax : + 94-011-2233153

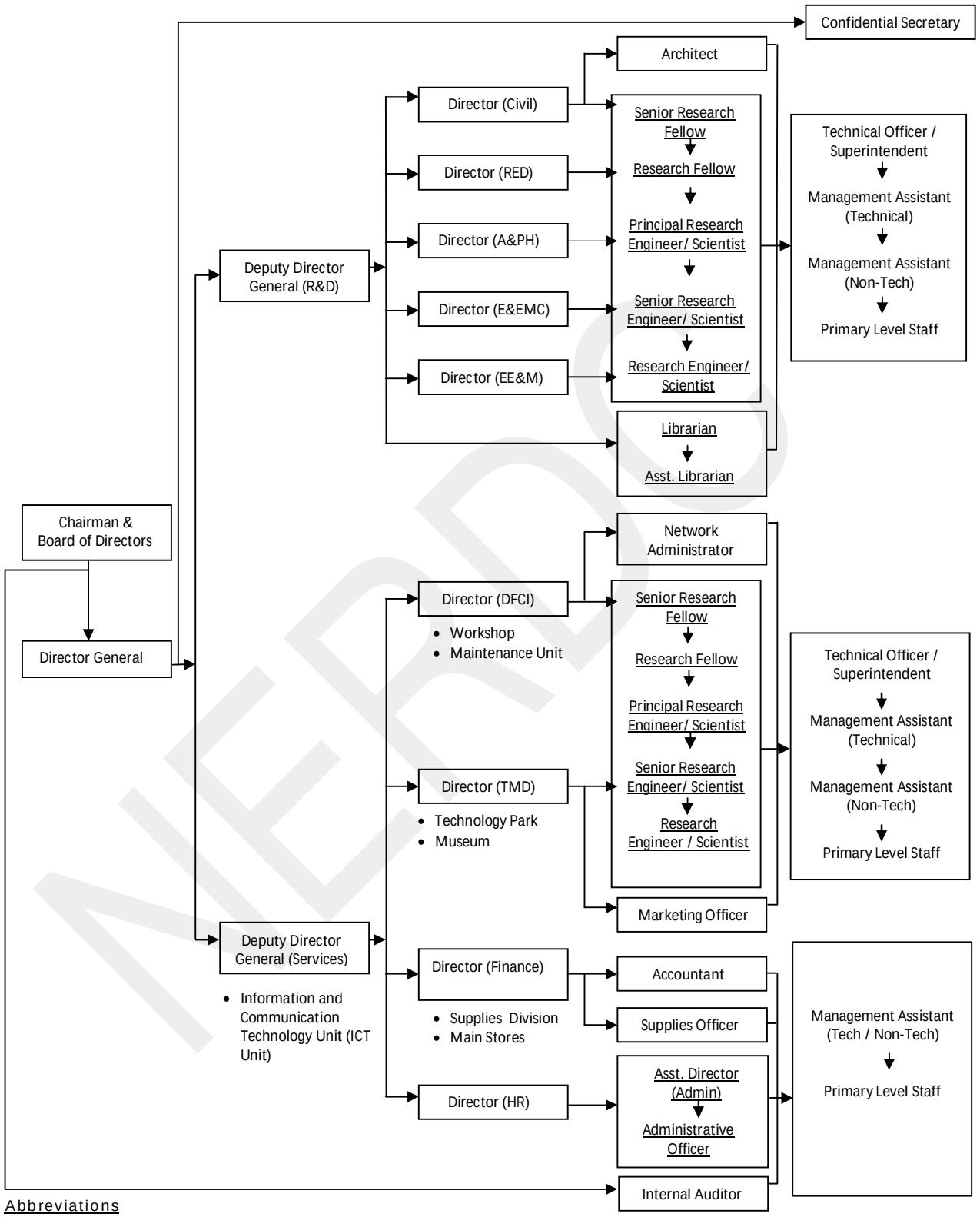
BANKERS

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 Department
E&EMC	-	Energy & Environmental Management Centre
EE&M	-	Electrical, Electronics & Mechatronics Department
DF&CI	-	Design Fabrication & Consultancy for Industries Development
TMD	-	Techno Marketing Department
HR	-	Human Resources

03. Chairman's Message

Despite the difficulties of recruiting and retaining good research engineers to the centre, the National Engineering Research and Development Centre (NERDC) of Sri Lanka, the premier Engineering Research and Development Organization in the Country has delivered fruitful outcomes to the society. The Centre being governed by the public administration and treasury circulars for determining the schemes of recruitment and for basic remunerations is unable to offer market rates especially for engineers. 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. In fact during the last 2 years, the NERDC has lost 14 Engineers in AR1 (Recruitment category - Research Engineer). NERDC also has a large number of vacancies at Middle levels due to the avalanche effect of the above during the past few years The salaries offered for senior positions in the research cadre being equally low, the above vacancies which are vital to guide the young research engineer could not be filled through the advertisements placed over the years. The engineers at NERD centre could not benefit through the recently introduced research allowance due to lack of qualified staff remaining at NERDC. However in an attempt to encourage the existing staff to carry out research and consultancy work for the industry, the Centre has implemented an Incentive Scheme based on the FC No.380, during the year 2012. The effects of the above on the performance of our work are yet to be analyzed as the Incentive only has been paid in January 2013. Yet it is time that the policy makers take a serious note in adopting a policy to remunerate engineers of government research institutions with an attractive starting salary so as not to paralyze the R&D activities at these 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, although the R&D activities carried out during 2012 had come down marginally over that of 2011. 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 issues pertaining to SME's, the high price of constructional materials, shortage of skilled labour and energy crisis in Agriculture and Plantations Sectors. The NERDC has also maintained its contractual services at the same level as that of 2011 although the centre suffered badly with the exodus of engineers during 2011/12.

As noted in the first paragraph, the engineering skill shortage is impacting on our ability to be a successful Engineering R&D Institution in the country. Hence the Centre has provided its staff more capacity building and skill development programs both local and overseas during 2012 in a bid to retain its staff and to meet future challenges

The Sri Lankan construction industry tends to follow the performance of the economy very closely. As economic conditions improved in the country in 2011/12, 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 and Anuradhapura districts along with 'Dayata Kirula' National exhibition using NERDC cost effective technologies. The project, which utilized the Civil Defense Force Personnel for construction activities has been very successful. 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 architectural outlook offered to our cost effective housing technologies is depicted through the recently completed Nurses' Quarters at Polonnaruwa, a project handled by NERD Centre to train personnel for the construction of buildings using NERD technologies.

Application of Fire Woodchips as fuel energy for tea drying 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 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

04. 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
	Senior Research Scientist	
	Mrs. P M G Pathiraja	MSc (Environmental Science & Technology), BSc (Special)
	Research Engineers	
	Ms. N P T Perera	MSc, BSc Eng
	Mr. L L Lalith Kumara	MSc, BSc Eng up to 25.02.2012
	Mrs. N S Gamage	BSc Eng up to 02.09.2012
	Mr. M D Sahardeen	BSc Eng
Civil Engineering Department	Director (Technical)	
	Eng. (Mrs) J A C Chrishanthi	BSc Eng, C Eng, MIE(SL)
	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)
	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	BSc Eng
	Principal Research Engineers	
	Mr. D M Punchibanda	BSc Eng.
	Research Engineers	
	Mrs. R M D S Gunarathne	BSc Eng- upto –31.07.2012
	Mr. S G J U Samarasinghe	EC(UK) Part I & II, N.D.T. upto – 31.03.2012
	Ms. N P Kumarasinghe	BSc Eng
	Ms. L M S D Perera	BSc Eng- upto –09.10.2012

Agriculture Engineering & Post Harvest Technology Department (AE & PHT)	Director (Technical)	
	Mr. K Y H D Shantha	BSc Eng M Sc
	Research Fellow	
	Eng.W K R Peiris	MPhil, MA(Buddhist Stud) BSc Eng, C Eng, MIE(SL)
	Principal Research Engineer	
	Mrs. Y M M K Ranathunga	N.D.T.
	Research Engineers	
	Ms. K U C Perera	BSc Eng
	Mrs. P M Y S Pathiraja	BSc Eng
	Mr. S A P Shalinda Silva	BSc Eng - from 01.06.2012
Electrical, Electronics & Mechatronic Department (E/E & M)	Head, Electrical/Electronies & Mechatronic	
	Eng (Mrs) N G D Wijesiriwardane	MEng, C Eng, MIE (SL)
	Research Engineers	
	Mr. H P Hementha Kumara	MSc Eng, EC (UK) PART I & II
	Mr. L K D C A Karunaratne	BSc (Eng) – up to 01.10.2012
	Mr. S M Handagala	BSc Eng
	Mr. H S Jayawickrama	BSc Eng - from 06.11.2012
Design Fabrication & Consultancy for Industry Department (DF & CI)	Director (Technical)	
	Mr. A A S P Jayasinghe	BSc Eng Hons
	Principal Research Engineers	
	Eng. H M L U Herath	BSc Eng
	Eng. A R C Salgado	BSc Eng
	Mr. S P Perera	EC(UK) Part I & II, NDT
Techno Marketing Department (TMD)	Director (Technical)	
	Eng. M A M Fernando	PGDip (Energy) IESL Part I & II, CEng, MIE (SL)
	Principal Research Engineer	
	Mr. D V Wimalasena	NDT, Dip in Marketing(SL)
	Marketing Officer	
	Mr. S Wijesooriya	BSc (Agriculture) Special
Finance Department	Finance Manager	
	Mrs. D V S Perera	ICMA Professional Part II,
	Accountant	
	Mr. J M R S Jayasinghe	BSc (Bus Adm) Special ICASL Professional Part I
Internal Audit	Internal Auditor	
	Mr. P B Susantha	HNDA Chartered

Human Resources 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 31.12.2012

Top Management	-	03
Engineers	-	26
Other Executives	-	10
Junior Managers	-	10
Management Assistants (Technical)	-	17
Management Assistants (Non – Technical)	-	45
Primary Level Staff (PL1, PL3)	-	158
Total Staff	-	269

05. Human Resources

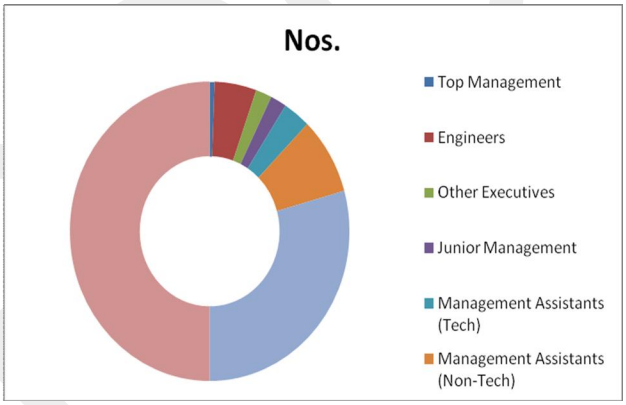
Human Resources (HR) is the most effective tool and life blood of any organization because of its liveliness and its essentiality. In other words without the Human Resource, the other resources cannot be effectively utilized or managed in an organization.

The permanent HR cadre of the Centre constitutes 269 employees and this includes Engineers numbering 29 comprising the Top Management, Other Executives being 10, Junior Executives 10, Technical Staff 17, Management Assistants 45, PL Staff, the majority being 158.

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

Summary Information on Staff Strength

Staff Category	Nos
Top Management	03
Engineers	26
Other Executives	10
Junior Executives	10
Management Assistants (Tech)	17
Management Assistants (Non-Tech)	45
Primary Level Staff	158
Total	269



Following new recruitments have been done internally /externally to the Centre during the year 2012.

Name	Designation	Department	Date
01. Mr.A D L S Wimalaweera	Management Assistant	Technology Park	02.01.2012
02. Mr. J K A Chaminda Sampath	Office Aid	E & EMC	01.02.2012
03. Mr. S W Abeywardena	Office Aid	Administration	01.02.2012
04. Mr. H A N Mahesh Kumara	Office Aid	TMD	01.02.2012
05. Mr. V R P M E Sanathake	Office Aid	Finance	01.02.2012
06. Mr. B Dammith Priyanka	Office Aid	Finance	01.02.2012
07. Mr. D D W Disanayake	Tool Keeper	Civil Eng.	01.02.2012
08. Mr. M Vijitha Kumara	Tool Keeper	RED	01.02.2012
09. Mr. G G Mangala Perera	Tool Keeper	Ag. PHT	01.02.2012
10. Mr. W M A D Weerasekera	Tool Keeper	DF & CI	01.02.2012
11. Mr. D W A M Amaradasa	Driver	Administration	01.03.2012
12. Mr. L A D D Liyanaarachchi	Driver	Administration	01.03.2012
13. Miss M G N Sandanayake	Book Keeper	Finance	02.04.2012
14. Mr. S A P Shalinda Silva	Research Engineer	AE & PHT	01.06.2012

Name	Designation	Department	Date
15. Mr. A M K Wijethilake	Driver	Administration	26.06.2012
16. Mr. A P H G L Samarasinghe	Tool Keeper	Main Stores	26.06.2012
17. Mrs H D C Hettiarachchi	Technical Officer	E E & M	02.07.2012
18. Miss. C M Kondasinghe	Research Engineer	E E & M	02.07.2012
19. Miss. W M S M Wickramasinghe	Research Engineer	E E & M	02.07.2012
20. Mrs K K S D Pushpasiri	Technical Officer	RED	02.07.2012
21. Mr. R R M S Rajapaksha	Technical Assistant	E & EMC	02.08.2012
22. Miss.B R Premarathne	Technical Assistant	AE & PHT	03.08.2012
23. Mr. E A N Chandana	Technical Assistant	RED	20.08.2012
24. Mr. M K S S Kumara	Technical Assistant	E E & M	03.09.2012
25. Miss. J M M S K Jayalath	Technical Assistant	E E & M	03.09.2012
26. Miss I S Dikkumbura	Technical Assistant	E & EMC	17.09.2012
27. Mr.A A N S Adikari	Superintendent – T/P	Technology Park	15.10.2012
28. Mr N A D D J Prasanna	Superintendent – Maintenance	DF & CI	01.11.2012
29. Mr. H S Jayawickrama	Mechanical Engineer	E E & M	06.11.2012
30. Mr. W H S Ramal Silva	Superintendent – Workshop	DF & CI	15.11.2012

The service periods of the following employees have been extended with the approval of the Board of Directors during the year 2012.

Name	Designation	Department	Date *(By One year)*
01. Mrs. H D N Chithra	Draughtsman	AE & PHT	08.11.2012 - 07.11.2013
02. Mrs L S I Silva	Draughtsman	Civil Eng.	14.11.2012 - 15.11.2013
03. Mr. H A J Fernando	Electrician	Ele. & Electronic	26.09.2012 - 25.09.2013
04. Mr. H P Ranasinghe	Welder/Fitter	Ag & P.H.T.	17.04.2012 - 16.04.2013
05. Mr. H A Jayawardena	Labourer	Civil Eng.	16.12.2012 - 15.12.2013
06. Mr. A A D P Antony	Pipe Fitter	Administration	03.03.2012 - 02.03.2013
07. Mr. A L Chandrarathne	Electrician	Ele. & Electronic	10.08.2012 - 09.08.2013
08. Mr.H W S RJayasundara	Fabricator	R.E.D.	08.08.2012 - 07.08.2013
09. Mr. M G Dharmasinghe	Welder/Fitter	AE & PHT	08.10.2012 - 07.10.2013

Following Staff Members have been retired from the Centre during the year 2012

Name	Designation	Department	Date of Retirement
01. Mrs. H D N Chithra	Draughtsman	AE & PHT	07.11.2012
02. Mrs. Y D Y Silva	Management Assistant	DF & CI	31.12.2012

Following Staff Members have been resigned from the Centre in the year 2012

Name	Designation	Department	Date of Resigned
01. Mr. M Sumathipala Silva	Labourer	Civil Eng.	31.01.2012
02. Mr. L L Lalith Kumara	Research Engineer	E & EMC	25.02.2012
03. Miss. P Madhavi Perera	Research Engineer	E E & M	24.03.2012
04. Mr. M Cyril Silva	Labourer	Civil Eng	30.03.2012
05. Mr. S G J U Samarasinghe	Research Engineer	R E D	31.03.2012
06. Mr. W M A D Weerasekera	Tool Keeper	DF & CI	14.05.2012
07. Mr. M A S Bandara	Supervisor	E E & M	08.06.2012
08. Mr.. W M Nihal Ranasinghe	Gardner	Administration	29.06.2012
09. Mr. J A S Kumara	Electrician	E E & M	31.07.2012
10. Mrs. R M D S Gunarathne	Research Engineer	R E D	31.07.2012
11. Mr. G Anura Silva	Labourer	Civil Eng	06.08.2012
12. Mr. M O G M Janz	Labourer	Civil Eng	10.08.2012
13. Miss. C M Kondasinghe	Research Engineer	E E & M	29.08.2012
14. Mr. R R M S Rajapaksha	Technical Assistant	E & EMC	30.08.2012
15. Mrs. N S Gamage	Research Engineer	E & EMC	02.09.2012
16. Mr. M S Y V K Perera	Carpenter	Civil Eng	26.09.2012
17. Mr. L K D C A Karunarathne	Research Engineer	E E & M	01.10.2012
18. Miss. W M S M Wickramasinghe	Research Engineer	E E & M	01.10.2012
19. Mrs. L M S D Perera	Research Engineer	R E D	09.10.2012
20. Mr. K Sarath Kaniut	Welder/Fitter	RED	13.10.2012

5.1 Capacity Building/ Skill Development Programmes

5.1.1 In-house Training Programmes

- 1/2 day In-house training programme (Fire Demonstration) was conducted by the Alpex Company at the NERD Centre on 19.10.2012 to educate on how to operate fire extinguishers in an emergency situation. A group of staff members at Primary Level representing each Department participated.

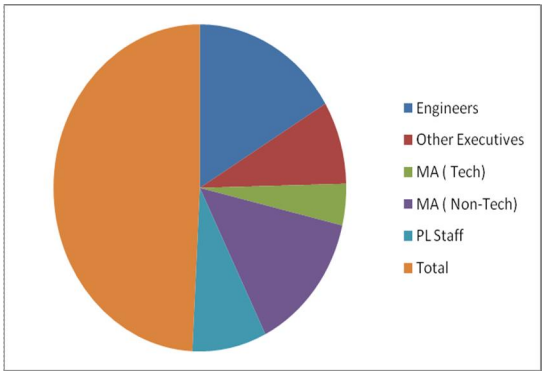
5.1.2 Local Training/ Skill Development Programmes

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 2012 Centre has provided ninety four (94) local training opportunities to its staff members at a cost of seven hundred forty two and eighty one thousand (SLR. 742, 081.00) Sri Lankan Rupees whilst providing such local training opportunities NERDC has also given 14 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 and the cost spent over that was eight hundred twenty six thousand one hundred and twelve (826,112.00) Sri Lankan Rupees.

Information on Local Training Opportunities provided by the Centre in 2012

Staff Category	Nos.
Engineers	20
Other Executives	08
MA (Tech)	05
MA (Non-Tech)	17
PL Staff	10
Total	60



Skilled Development Programmes - 2012

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
1	Mrs. N P T Perera	Research Engineer	E & EMC	Training on ISO/TEC 17025:2005 Internal Auditing of Laboratory Management systems	2012/1/26,27	Sri Lanka Accreditation Board	Rs.7000/-
2	Miss P Madhavi Perera	Research Engineer	EE&M	Training on ISO/TEC 17025:2005 Internal Auditing of	2012/1/26,27	Sri Lanka Accreditation Board	Rs.7000/-
				Laboratory Management systems			
3	Mr L K D C A Karunaratne	Research Engineer	EE&M	Workshop on Industrial Measurement & contract	2012.02.10,11	University of Moratuwa	Rs.20,000/-
4	Mrs H D C Hettiarachchi	Technical Assistant	EE&M	Workshop on Industrial Measurement & contract	2012.02.10,11	University of Moratuwa	Rs.20,000/-
5	Mrs. R M D S Gunaratne	Research Engineer	RED	Workshop on Effective proposal writing	2012.01.30	National Science Foundation	Rs.1500/-
6	Mr. W P R D Weerasinghe	Principal Research Eng.	Civil Engineering	Certificate course on quantity surveying	from 11/2/2012 six consecutive Saturdays.	Institute of Engineers Sri Lanka	Rs.25,000/-
7	Mr. H M L U Herath	Principal Research Eng.	DFCI	Seminars on Hydraulic symbols & circuits	2012.2.17	Construction Equipment Training centre CETRAC	Rs. 3,000/-
8	Miss N P T Perera	Research Engineer	E & EMC	Training on testing laboratory accreditation	212.2.21,22,23,24	Sri Lanka sustainable Energy authority	Free of charge
9	Mrs H D C Hettiarachchi	Technical Assistant	EE&M	Training on testing laboratory accreditation	212.2.21,22,23,24	Sri Lanka sustainable Energy authority	Free of charge
10	Miss D P Edirisinghe	Technical Assistant	Civil Engineering	Training on testing laboratory accreditation	212.2.21,22,23,24	Sri Lanka sustainable Energy authority	Free of charge
11	Mr R H A Jeewananda	Supplies Officer	Supplies	Procurement Training programme	2012.03.02	Ministry of Technology & Research	Free of charge
12	Mr I R Sarath	Motor Mechanic	Vehicle Maintenance	What you should know about Hybrid vehicles as a driver	2012.03.04	Institute of Industrial Techno Management pvt Ltd.	Rs. 3,500/-
13	Mr S A Ruwan Nishantha	Fitter	Vehicle Maintenance	What you should know about Hybrid vehicles as a driver	2012.03.04	Institute of Industrial Techno Management pvt Ltd.	Rs. 3,500/-
14	Mr K G N Rathnayake	Assistant Director (Administration)	Administration	Development programme for Transport Managers	2012.03.29,30	Institute of Industrial Techno Management pvt Ltd.	Rs.5500/-
15	Mr D D A Namal	Director General	Management	Regional seminar on Training of trainers on Energy Management systems ISO 50001	2012.02.27	Sri Lanka standard Institution	Free of charge
16	Mr K T Jayasinghe	Principal Research Engineer	E & EMC	Regional seminar on Training of trainers on Energy Management systems ISO 50001	2012.02.27	Sri Lanka standard Institution	Rs 5600/-
17	Mr G K K A De Silva	Deputy Director General (R&D)	DDG Office	Seminar on ICTAD Price Fluctuation Formula	2012.03.22	Institute for construction Training & Development	Rs.3900/-

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
18	Mr R H A Jeewananda	Supply Officer	Supplies	Seminar on ICTAD price Fluctuation Formula	2012.03.22	Institute for construction Training & Development	Rs.3900/-
19	Mrs K A D Chandrakanthi	Management Assistant	Stores	Work shop on stores Management Logistics & Purchasing Procedure	2012.03.22	Federation of Chamber of Commerce & Industry of Sri Lanka	Rs.4000/-
20	Miss Chamila Ekanayake	Management Assistant	Supplies	Work shop on stores Management Logistics & Purchasing Procedure	2012.03.22	Federation of Chamber of Commerce & Industry of Sri Lanka	Rs.4000/-
21	Mr G K K A De Silva	Deputy Director General (Project))	DDG Office	Design of Sewerage Disposal systems & stores water Disposal system	2012.03.17,24,31	Institute for construction Training & Development	Rs.9,000/-
22	Miss N P T Perera	Research Engineer	E & EMC	Design of Sewerage Disposal systems & stores water Disposal system	2012.03.17,24,31	Institute for construction Training & Development	Rs.9,000/-
23	Mr L B Aruna Shantha	Technical Assistant	Civil Engineering	Work shop on concrete technology	2012.03.17	Centre for Habit Planning & Development	Rs.2,000/-
24	Mr Suresh P Perera	Research Engineer	DFCI	Workshop on commercializing modern scientific research & technology	2012.03.30	Sri Lanka Association for the Advancement of Science	Rs.3,000/-
25	Mr L D D Liyanarachchi	Driver	Vehicle Maintenance	Accident Prevention & vehicle safety through defensive driving	2012.04.01	Institute of Industrial Techno Management Pvt .Ltd.	Rs.3,500/-
26	Mr. D A M Amaradasa	Driver	Vehicle Maintenance	Accident Prevention & vehicle safety through defensive driving	2012.04.01	Institute of Industrial Techno Management Pvt. Ltd.	Rs.3,500/-
27	Ms. M S D Perera	Research Engineer	RED	Workshop on commercializing modern scientific research & technology	2012.03.31	Sri Lanka Association for the Advancement of Science	Rs.3,000/-
28	Mrs. P M Y S Pathiraja	Research Engineer	DDG Office	Workshop on commercializing modern scientific research & technology	2012.03.31	Sri Lanka Association for the Advancement of Science	Rs.3,000/-
29	Mr A H Piyasiri	Deputy Director General (Services)	DDG Office	Workshop on project proposal formulation	2012.3.29 & 30	Sri Lanka Foundation Institute	Rs.3500/-
30	Mr N K Edirisinghe	Director	RED	Workshop on project proposal formulation	2012.3.29 & 30	Sri Lanka Foundation Institute	Rs.3500/-
31	Mr G K K A De Silva	Deputy Director General (R&D)	DDG Office	Intellectual property rights for innovation & Development	2012.05.08-2012.05.10	Industrial Technology Institute,	Rs.6000/-
32	Mr M A S Bandara	Supervisor	EE&M	Course on Electrical installation of buildings	2012.04.27,28,28	Construction Equipment Training centre (CETRAC),	Rs.14,200/-

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
33	Mrs. Y M M K Ranatunga	Principal Research Engineer	AE&PHT	Leadership Training for Managers	2012.04.26	Skilled Development Funds Ltd	Rs.4500/-
34	Mrs. J A C Chrishanthi	Director	Civil Engineering	Advanced Business writing	2012.05.15	Rens Global Learning (Pvt) Ltd.	Rs.7840/-
35	Miss .N P T Perera	Research Engineer	E & EMC	Assessor Training for Accreditation of Testing and calibration Laboratories	2012.05.14 - 18th	Sri Lanka Accreditation Board	Rs.35,000/-
36	Mr N S Nilanka	Labourer	Vehicle Maintenance	Course on Air conditioning systems of Automobile	12th 19th 26th May 2012	Construction Equipment Training Centre,	Rs.10,200/-
37	Mrs D P Edirisinghe	Technical Assistant	Civil Engineering	Super 5S & Kaizen Management	16th 17th 18th May 2012	National Institute of Labour studies	Rs.7500/-
38	Mr M S Ananda	Management Assistant	Technology Park	Super 5S & Kaizen Management	16th 17th 18th May 2012	National Institute of Labour studies,	Rs.7500/-
39	Mr K Y H D Shantha	Director	AE&PHT.	Human Resources Development Through Disciplinary Management	2012.05.18 & 19	Centre for studies in Disciplinary Management	Rs. 8250/-
40	Mr C A U Dalpathadu	Architect	Civil Engineering	Project Management	2012.06.28 &29	Sri Lanka Foundation Institute	Rs.3500/-
41	Mr W P R D Weerasinghe	Principal Research Engineer	Civil Engineering	Work shop on dealing with difficult people	2012.05.31	Sri Lanka Foundation	Rs.1750/-
42	Mr M D Sahardeen	Research Engineer	E & EMC	Training Programme on Industrial safety & Health	2012.05.26	Construction Equipment Training Centre	Rs.5750/-
43	Mr N K Edirisinghe	Director	RED	Project Management Professional Training Programme	2012.06.02	The institution of Engineers Sri Lanka	Rs.27,000/-
44	Mr J M R S Jayasinghe	Accountant	Finance	Implementation of International Financial Reporting standards	2012.06.26	PRAG Service Pvt Ltd.	Rs.8500/-
45	Miss N P T Perera	Research Engineer	E & EMC	Work shop on Estimation of measurement uncertainty for routine analysis chemical parameters	2012.06.27,28 & 29	Industrial Technology Institute	Rs.22,400/-
46	Mr K T Jayasinghe	Research Engineer	E & EMC	Work shop on Energy Efficient pumping systems	2012.06.29,30, 2012.07.01	Construction Equipment Training Centre	Rs.14,200/-
47	Mr R Thusyanandan	Technical Assistant	E & EMC	Workshop on effective proposal writing	2012.06.19	National Science Foundation,	Rs.500/-
48	Mr C A U Dalpathadu	Architecture.	Civil Engineering	Symposium on Energy Efficiency in the construction sector	2012.06.20	Sri Lanka Institute of Architects ,	Free of charge

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
49	Mrs N G D Wijesiriwardane	Research Fellow HoD	EE&M	International conference on clean & Green Energy	2012.06.25	The institution of Engineering & Technology,	Rs.6000/-
50	Mr. D W A Mangala Amaradasa	Driver	Vehicle Maintenance	Workshop on safety Driver Programme	2012.06.29	Construction Equipment Training Centre	Rs.2000/-
51	Mrs. J P A D S I Jayasekara	Director (HR)	Administration	International Human Resources conference 2012	2012.06.26 & 27	The institute of Personnel Management,	Rs.15,300/-
52	Mr N K Edirisinghe	Director	RED	Half a Day workshop on Industrial Liaison	2012.07.09	The Institute of Engineer Sri Lanka	Free of charge
53	Mr J A A D Jayasooriya	Head	E & EMC	Training Programme on "safe operation of High Risk Machinery including steam Boilers	2012.07.28	Construction Equipment Training Cenre.	Rs.5750/-
54	Mr. R Thushiyandan	Technical Assistant	E & EMC	Training Programme on "safe operation of High Risk Machinery including steam Boilers	2012.07.28	Construction Equipment Training Cenre.	Rs.5750/-
55	Mr. R Thushiyandan	Technical Assistant	E & EMC	Assessor Training Programme for Inspection of vehicle Emission	2012.08.20 - 2012.08.24	Sri Lanka Accreditation Board	Free of charge
56	Ms. M G N Sandanayaka	Book Keeper	Finance	Implementation of International Financial Reporting standards	2012.08.21	PRAG Service Pvt Ltd.	Rs.8500/-
57	Mrs. A G M P K Anhettigama	Accounts Assistant	Finance	Implementation of International Financial Reporting standards	2012.08.21	PRAG Service Pvt Ltd.	Rs.8500/-
58	Mrs. D M T P K Devagiri	Librarian	Library	Seminar on Empowering Scientist with information	2012.08.24	National Science Foundation,	Free of charge
59	Mrs D V S Perera	Finance Manager	Finance	How to minimize audit problems in government sector	2012.08.16	Sri Lanka Foundation	Rs.2500/-
60	Mr. D D Ananda Namal	Director General	Management	How to minimize audit problems in government sector	2012.08.16	Sri Lanka Foundation	Rs.2500/-
61	Mrs. D P Edirisinghe	Technical Assistant	Civil Engineering	Requirement & policies for construction contract	2012.8.30	The Institute of Quantity Surveys of Sri Lanka, ,	Rs.500/-
62	Mrs. P G N Chitralatha	Management Assistant	D G Office	Computer Skills for Professionals	2012.09.11,12,13	Skilled Development Fund Ltd.	Rs.10,000/-
63	Mrs. K B H V Leiton	Management Assistant	D G Office	Computer Skills for Professionals	2012.09.11,12,13	Skilled Development Fund Ltd.	Rs.10,000/-
64	Mrs D V S Perera	Finance Manager	Finance	Implementation of International Financial Reporting Standards	2012.09.18	PRAG Service Pvt Ltd.	Rs 9500/-
65	Mrs A G N P K Anhettigama	Accounts Assistant	Finance	Implementation of International Financial Reporting Standards	2012.09.18	PRAG Service Pvt Ltd.	Rs 9500/-
66	Miss M G N Sandanayaka	Book Keeper	Finance	Implementation of International Financial Reporting standards	2012.09.18	PRAG Service Pvt Ltd.	Rs 9500/-
67	Miss W M D Wijethunge	Management Assistant	E & EMC	Developing Management Assistant	2012.09.13	Skilled Development Fund Ltd.	Rs.4500/-
68	Mrs K A A Lakmali Kuruppu	Management Assistant	TMD	Developing Management Assistant	2012.09.13	Skilled Development Fund Ltd.	Rs.4500/-
69	Mrs. B A L Piuma Bollegala	Management Assistant	Administration	Developing Management Assistant	2012.09.13	Skilled Development Fund Ltd.	Rs.4500/-

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
70	Mrs L K W N Perera	Management Assistant	Administration	Human Resources Management Foundation Programme	2012.09.28 5 days on Friday	Construction Equipment Training Centre,.	Rs.9750/-
71	Mrs D S C Wanniarachchi	Management Assistant	Administration	Human Resources Management Foundation Programme	2012.09.28 5 days on Friday	Construction Equipment Training Centre,.	Rs.9750/-
72	Mr K T Jayasinghe	Principal Research Engineer	E & EMC	ISO 50001 Lead audits Training	16th, 17th, 18th, 19th & 22nd Oct. 2012	Sri Lanka Energy Management Association,	Rs.60,000/-
73	Mrs D V S Perera	Finance Manager	Finance	Implementation of International Financial Reporting standards	2012.1.09	Prag Institute ,	Rs.8500/-
74	Mr R Thusyanandan	Technical Officer	E & EMC	Speech craft programme	2012.10.24 (1 days Wednesdays)	The institution of Engineering & Technology,	Rs.10,000/-
75	Mr A R C Salgado	Principal Research Eng.	CME	Quality control circles seminar	2012.10.18 & 19	National Institute of Labour studies,	Rs.5750/-
76	Mr S A Ajith Samarasinghe	Electrician	EE&M	Maintenance of Auto Electrical systems	2012.11.06,7,8,9	Construction Equipment Training Cenre,	Rs.9,000/-
77	Mrs S K S Subasinghe	Management Assistant	Finance	Computer Skills for Professionals	2012.11.23,28,29, 30 November 2012	Skilled Development Fund Ltd	Rs.12,500/-
78	Mrs. P D R Damayanthi	Management Assistant	Finance	Computer Skills for Professionals	2012.11.23,28,29, 30 November 2012	Skilled Development Fund Ltd.	Rs.12,500/-
79	Mr K N L Perera	Management Assistant	Supplies	Public Procurement Proceeding	2012.11.29 & 30	Skilled Development Fund Ltd.	Rs.8,000/-
80	Miss E C N Ekanayake	Management Assistant	Supplies	Public Procurement Proceeding	2012.11.29 & 30	Skilled Development Fund Ltd.	Rs.8,000/-
81	Mr J A A D Jayasooriya	Research Fellow / HoD	E & EMC	Energy Auditing Theory sessions	2012.Nov.17 to 1st Dec. 2012	Sri Lanka sustainable Energy Authority,	Rs. 33,000/-
82	Mr M D Sahardeen	Research Engineer	E & EMC	Energy Auditing Theory sessions	2012.Nov.17 to 1st Dec. 2012	Sri Lanka sustainable Energy Authority,.	Rs. 33,000/-
83	Mrs D V S Perera	Finance Manager	Finance	Financial Reporting in Compliance with Accounting Standards	2012.12.04 & 05	Skilled Development Funds Ltd.	Rs.4,500/-
84	Mrs G D S Gamage	Management Assistant	Finance	Financial Reporting in Compliance with Accounting Standards	2012.12.04 & 05	Skilled Development Funds Ltd.	Rs.4,500/-

No.	Name	Designation	Department	Programme	Duration	Training Institute	Course Fee
85	Mrs R M T Udayani	Management Assistant	Finance	Financial Reporting in Compliance with Accounting Standards	2012.12.04 & 05	Skilled Development Funds Ltd.	Rs.4,500/-
86	Mr S A Smantha	Office Aide	DG Office	Higher Productivity for Office Aide Training Programme	2012.12.04 & 05	National Institute of Labour studies,	Rs.5,750/-
87	Mr. S P Upali Jayananda	Office Aide	Administration	Higher Productivity for Office Aide Training Programme	2012.12.04 & 05	National Institute of Labour studies,	Rs.5,750/-
88	Mr P L K Kularathne	Fitter	RED	Basic Knowledge and Best Practices for Practicing Mechanical Maintenance Fitters to Achieve Higher Productivity	2012.12.17 & 18	Institute of Industrial Techno Management Pvt Ltd.	Rs.5,500/-
89	Mr U P S R Perera	Labourer	DFCI	Basic Knowledge and Best Practices for Practicing Mechanical Maintenance Fitters to Achieve Higher Productivity	2012.12.17 & 18	Institute of Industrial Techno Management Pvt Ltd.	Rs.5,500/-
90	Mr W P R D Weerasinghe	Principal Research Eng.	Civil Engineering	Training Programme on "Total Station and Auto CAD for Engineering Surveys"	15,16,22,23,29 & 30 Dec.2012	University of Moratuwa,Department of Civil Engineering, Moratuwa	Rs.29,500/-
91	Mr A R C Salgado	Principal Research Eng.	DFCI	Training Programme Watch Guard	2012.12.04	Bluechip Co.,.	Free of charge
92	Mr H P J N Kumara	Computer Technician	DFCI	Training Programme Watch Guard	2012.12.04	Bluechip Co., 210,Nawala Road.Nugegoda.	Free of charge
93	ENG. G K K A De Silva	DDG (R&D)	Management	International Conference on Sustainable Built Environment	14,15 & 16 Dec.2012	University of Peradeniya Civil Engineering Dept.,	Rs.20,000/-
94	Mrs. N P T Perera	Research Engineer	E&EMC	International Conference on Sustainable Built Environment	14,15 & 16 Dec.2012	University of Peradeniya - Civil Engineering Dept.,	Rs.20,000/-

FOREIGN SCHOLARSHIPS/SEMINARS/TRAINING-PROGRAMMES/WORKSHOPS – 2012

	NAME & DESIGNATION OF THE OFFICER	DEPARTMENT	NAME OF THE PROGRAMME	PERIOD	COUNTRY	SPONSORING INSTITUTIONS
1	Mr. S M Handagala Research Engineer	EE&M	International Training on "Mechatronics & ITS Applications"	16/01/2012-23/03/2012	India	Government of India
2	Eng. D D A Namal Director General	Management	Consultative Meeting for the Establishment of a Renewable Energy Technology Bank (RET-Bank)	14/05/2012-15/05/2012	Thailand	Asian and Pacific Centre for Transfer of Technology (APCTT)
3	Mrs. Y M M K Ranatunga Principal Research Engineer	AE&PHT	BIMSTEC Regional Workshop and Study Visit on Bio-fuels	06/06/2012-07/06/2012	Thailand	Ministry of Energy of Thailand (without Air Fare)
4	Mrs. L M S D Perera Research Engineer	RED	BIMSTEC Regional Workshop and Study Visit on Bio-fuels	06/06/2012-07/06/2012	Thailand	Ministry of Energy of Thailand (without Air Fare)
5	Mr. A H Piyasiri Deputy Director General (Services)	Management	'Senior Management Programme on Managing Research Technological Organizations (RTOs)'	17/06/2012-24/06/2012	Malaysia	SIRIM Berhad, Malaysia
6	Mrs. P M G Pathiraja Senior Research Scientist	E&EMC	Global Methane Initiative (GMI) Municipal Solid Waste (MSW) Subcommittee.	02/07/2012-03/07/2012	Singapore	US EPA
7	Mr. K T Jayasinghe Principal Research Engineer	E&EMC	Seminar on Energy Saving. Emission Reduction and New Energy Industry Development	04/07/2012-24/07/2012	China	Government of China
8	Eng. G K K A De Silva Deputy Director General (R&D)	Management	Regional Seminar on Intellectual Property Management and Commercialization of IP Assets and the WIPO Development Agenda Regional Consultation Meeting on Intellectual Property and Technological Transfer	12/07/2012-17/07/2012	Singapore	WIPO (World Intellectual Property Organization)
9	Eng.D.R.Pullaperuma Chairman		IET's Volunteers Conference Weekend	01/08/2012- 05/08/2012	India	IET (Institution of Engineering and Technology), India
10	Mr. N.K.Edirisinghe Director	RED	Regional Dialogue on Promoting Off-grid Renewable Energy Technologies for Enhancing Energy Security in the Asia - Pacific Region	04/10/2012- 05/10/2012	India	Asian and Pacific Centre for Transfer of Technology (APCTT)

	NAME & DESIGNATION OF THE OFFICER	DEPARTMENT	NAME OF THE PROGRAMME	PERIOD	COUNTRY	SPONSORING INSTITUTIONS
11	Mr. K G N Rathnayake Asst.Director (AD)	Administration	Human Recourse Development Professionals (National Institute of Rural Development)	21/11/2012-18/12/2012	India	Government of India under the India Technical Economic Co-operation (ITEC)
12	Eng. D D A Namal Director General	Management	Eighth Meeting of the Technical Committee and Consultative Workshop on Innovation System Diagnosis and Strategy Development -Best Practices	26/11/2012-28/11/2012	Philippines	Asian and Pacific Centre for Transfer of Technology (APCTT) for the Economic & Social Commission for Asia & the Pacific (ESCAP)
13	Eng. M A M Fernando Director (TMD)	TMD	Malaysia Technology Cooperation Program	03/12/2012-07/12/2012	Malaysia	Malaysian Technology Development Cooperation (MTDC)
14	Mr J M R S Jayasinghe Accountant	Finance	Study Visit as a part of the MBA Programme of University of Kelaniya	16/12/2012-07/22/2012	India	University of Kelaniya
15	Eng.D.R.Pulleperuma	Chairman	Eight Session of the Governing Council of the Asian and Pacific Centre for Transfer of Technology (APCTT)	14/12/2012	Thailand	Asian and Pacific Centre for Transfer of Technology (APCTT)

06. Performance Highlights of the Year 2012

During the year 2012, the NERD Centre (NERDC) focused on R&D activities in line with Country's policy directives on Science and Technology. Few Research Projects in the areas of Agriculture and Post Harvest, Renewable Energy and Building Technologies complementing the Mahinda Chinthana Policy document were initiated and implemented. NERDC continuously worked closely with Vidatha Programme in dissemination of developed technologies with a view of taking the R&D benefits to the rural poor, who are in need of such technologies. The Centre's effort has resulted in bringing up number of entrepreneurs at village level, who started their own industries using some of our technologies.

The Centre has involved in R&D activities in the renewable energy area with special emphasis to developing applications using bio-mass technologies, as bio-mass meets almost half of the country energy demand as evidenced by the Sri Lanka Energy Balance issued by SLSEA. The developing of a temperature controllable bakery oven is one such important project, which replaces the diesel operated bakery oven, L.P. Gas operated bakery oven or the wood log based conventional bakery oven. The centre has already completed the preparation of the technology package for wood chips operated tea dryer, which replaces the Diesel operated tea dryer system or the log wood operated tea drying system, saving appreciable energy to the tea industry. The technology is expected to be commercialized for the tea industry during 2013 on a pilot basis. It is also aimed at promoting the use of Gliricidia wood instead of Rubber or Jungle Log Wood in bringing sustainability to the tea industry.

In order to upgrade the Aruvedic Medicine system, a workshop was arranged for the Aruvedic Doctors and higher officers in Ministry of Indigenous Medicine to identify the key areas, where NERDC would be able to assist the equipment and process development needs of the sector. The Centre has been involved in developing machines required for the selected areas of the Aruvedic Industry to replace the conventional mechanisms used for manufacturing Aruvedic products in improving the productivity. A machine consisting of a Semi-automatic Hydraulic Press and an electrically operated Mixer has been designed and developed by the NERDC at the request of Pelwatte Dairy Industries for making a Nutritious Feeding Block for feeding the cattle using waste from Sugar Cane Industry. The centre has initiated a new programme along with the Provincial Councils under the direction of Sri Lanka Finance Commission in order to build at least two Nos. of government buildings in each province using NERDC developed Technologies. This programme will help to popularize NERDC cost effective building technologies.

The Centre has given consultancy services to SMEs to improve their productivity in making die & moulds based on the high end technologies. Specialized engineering solutions have been provided in the area of energy management services, environmental management and solid waste management.

The Centre has also given contribution to construct Library Buildings for schools in Monaragala and Anuradhapura districts under the direction of Presidential Secretariat.

Main details of important projects completed during the year.

Grid Connection of 100kWe Gassifier,

Objective of the project is for dissemination of knowledge on power generation through biomass using a 100kWe biomass Gassifier based power generation system and having the same Grid connected.

The imported biomass Gassifier has been installed at NERDC to illustrate the methods of renewable power generation. Thereby the centre has demonstrated the electricity production using fuel wood through gasification technology.

Scaling up of Fuel Wood Chips Feeding System at Deenside Tea Factory

Objective had been to replace of wood logs firing systems with wood chips in tea drying even as applicable to high capacity driers used in the tea industry

Project has been completed and the technology transfer package is now available for technology transfer.

Pilot unit has been installed at the Deenside Tea Factory at Gampola.

Development of Wood Chipping Machine for Tea Drying

Objective has been for the development of 2 Nos. of Fuel Wood Chipping Machines for Gliricidia and jungle fuel wood for tea drying.

Progress and achievements:- Two numbers of wood chipping machines were developed and tested at Deenside Tea Factory, Gampola.

Biomass Fuelled Temperature Controllable Bakery Oven for Rice Flour Products

In order to popularize the rice flour based bakery products throughout the country, a biomass based temperature controllable bakery project was introduced. The project is in progress and presently, the centre has been able to complete two field trials.

Biogas for Domestic Application

To produce biogas for domestic application using kitchen and toilet wastes.

<u>Progress</u>

The project has been completed and the results show that 30% of LP gas consumption in a household can be easily saved

Two Stage Type Anaerobic Digestion Plant at NERDC

In order to generate biogas with higher methane %, two stage type biogas plant was constructed. The project is in progress.

Construction of 30 Feet Foot-bridge at Kuruwita

In order to provide safe access for villages, this foot-bridge has been constructed using the cost effective technologies. Special advantages are;

1. Could be built by villagers themselves.
2. Less maintenance and more suitable for the places, where access is not available.

Construction of Library Buildings for Schools

Consultancy services have been provided for the construction of Library Buildings based on the cost effective technologies in Monaragala and Anuradhapura districts.
No. of Library Buildings constructed

- 05 Libraries in A'pura
- 15 Libraries in Moneragala

Construction of Cabanas based on the Cost Effective Building Technologies

In order to introduce the NERDC cost effective technologies to the tourist industry in Sri Lanka, the centre has designed and offered consultancy in the construction of an eco-friendly tourist cabana at the Air Force camp, Ekala..

Construction of Nurses' Quarters for the Hospital, Pollonnaruwa

In order to introduce the NERDC cost effective technologies to the health sector, the centre has designed and constructed this nurses' quarters giving a new architectural view to our technologies. Walls were constructed using the cement/soil stabilized blocks. Almost all the NERDC cost effective building technologies have been used.

Floor area - 128000 ft^2
Cost - Rs.28 million

Construction of 80'x25' Hostel Building for Sri Lanka Army, Panagoda

In order to introduce the NERDC cost effective technologies to the continuing building construction activities carried out by the army personnel since the cessation of terrorist activities, the Centre assisted the construction of this Hostel Building for Sri Lanka Army, Panagoda, using some of the NERDC cost effective building technologies. One special feature was the construction of slip form wall using cement / quarry dust. The wall does not require any plaster.

Cost – Rs.7.5 millions
Floor area – 3500 ft^2

Manufacture of Gravel, Sand & Cement Block Wall

As an alternative application to wall construction, which is instead of cement, sand block or brick masonry work – new blocks have been made using cement, gravel, sand. These blocks can be made using normal cement/sand blocks making machine.

Development of a Water Filter for Treatment for Domestic Wastewater at Domestic Level

In order to address the environmental issues in semi-urban areas, this technology has been introduced.

Field Testing of Pepper Thresher

Pepper Industry is one of our major export items earning foreign exchange to the country. One major issue is to separate pepper seeds from the Thresher in improving the productivity of the industry. A Pepper Thresher Machine has thus been developed and field trials carried out showed that the machine could separate the pepper successfully at the rate of 150kg–200kg/hr.

Scaling up of Palmyrah Juice Extractor

Scaling up of Palmyrah Juice Extractor has been completed. This was done at the request of Palmyrah Development Board. The product will improve the productivity of Palmyrah Industry.

Development of Fertilizer Applicator

Application of fertilizer for coconut plantation is time consuming and high labour involvement process. To increase the productivity of the process, we have developed a Fertilizer Applicator. At present, field testing is in progress.

Development of a Flap Gate for Minor Irrigation Scheme

Presently, vertically operated gates have been introduced to control water flow in the minor irrigation schemes.

In order to prevent erosion of canal bank and the other damages during heavy rain, a horizontally operated Flap Gate has been developed. This will provide smooth flow of water without any erosion.

Developments to the Aruvedic Medicine System

Traditional Aruvedic Doctors have many issues in the preparation of traditional medicine. These issues have been identified at a workshop with Aruvedic Doctors and decided to introduce following technologies in increasing the efficiency of producing of traditional medicine.

(a) Objective is to identify the temperature profiles of traditional *Bhasma* preparation furnaces. Thereafter, temperature profile of traditional furnace is matched with a modern oven to prepare Ayurvedic *bhasma*. Temperature profile of one such traditional oven has thus been identified – *Varaha puta*.

(b) A Proto type Gully making machine and a Gully Polishing Machine have been made and these machines go through the testing period.

(c) Herbal Juice Extracting Machines have also been developed. Hydraulic Jack Operated Virgin Coconut Oil Machine has been converted into the Herbal Juice Extracting Machine and field trials are in progress.

Development of Pinnato Drier

The Palmyrah Development Board has requested NERDC to develop a Dryer for the preparation of Pinnato, the pulp of palmyrah juice along with recommended additives dried using a solar drier. .

Development of a Machine for Hay Blocks

This is a new concept aimed for uplifting the dairy industry by introducing nutritious cattle feed as solid blocks made out of mainly sugar cane tops, molasses with few other ingredients.

The NERDC had developed a machine to make such hay blocks and presently it has been handed over to Pelwatte Dairy Industries for field trials.

Manufacturing of Virgin Coconut Oil Extractors

80 Nos. of Virgin Coconut Oil Extracting Machines have been given to the selected beneficiaries in Colombo district with the participation of Senior Government Ministers under the Divinaguma programme.

Consultancy Services

The NERDC has provided consultancy services and laboratory services to the industry in the fields of energy and environmental management, electrical, electronic & mechatronics and civil engineering.

Mainly, Dept. of Energy & Environmental Management has carried out No. of Energy Audits, Industrial Process Monitoring, Boiler tuning, Flue Gas Analysis and Environmental Monitoring Process.

Nos. of Energy Audits conducted - 07

Industrial Process Monitoring

Consultancy services - 40
Environmental Monitoring - 108

Boiler tuning & flue gas analysis -
No. of services - 07

Services for designs and consultancy services for waste water plants – 14

Consultancy services carried out by the Design, Fabrication & Consultancy to Industry

The above Dept. has carried out consultancy services to 85 customers in the following areas.

- Design and manufacture of Plastic Moulds, Rubber Moulds and Press Tools.
- Manufacture of components.
- Materials testing & Calibration/Scanning Services.

Total value of work done is Rs 3.8M.

Consultancy Services carried out by the Dept. of Electrical, Electronic & Mechatronics

The consultancy services have been provided for the importers of electrical & electronic items, Small and Medium Level Manufacturers and for Govt. Institutions.

Important services thus carried out by the Centre are;

Lead Acid Battery Testing - 22
Lamps Testing as per the SLS/229 & SLS /231 – 506
LED Lamps – 43
Calibration services for Lux Meters- 22

Popularization Programme

Number of popularization programmes has been carried out in popularizing the technologies developed by the NERDC throughout the country.

- 10 Nos. of licenses on the technologies developed by the NERDC have been issued for entrepreneurs.
- 05 Nos. of training programmes on the cost effective building technologies have been conducted for 90 participants.
- 14 Nos. of Awareness Programme on Cost Effective Technology have been conducted for the decision makers and technical staff of all the Provincial Councils.
- Participated in one television programme and 05 Nos. of technical papers has been published.
- Participated actively in the Divinaguma national Programme throughout the country in taking our technologies to the village
- Technology Park has been visited by 7000 Nos. of visitors.

7. Social, Welfare & Religious Activities

7.1 Welfare Association of NERDC

Welfare Association of the NERD Centre has organized following activities during the year 2012

- Blood Donation Campaign in commemoration of the late Vidyajyothi Dr. A N S Kulasinghe, one of the founder Chairmen of this Centre was held on 26.10.2012.
- 03 day Welfare trip was organized to go to Trincomalee from 30, 31 August and 01 September 2012.
- Awarding ceremony was organized on 21.12.2012 to offer prizes for the students of NERDC staff who have passed year 5 scholarship Examination.

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 tow 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 2012.

7.2.1 Buddhist Society

- In order to mark Ceremonial Opening of the Center activities of the Year 2012, a Pirith Chanting Ceremony was organized on 02 January 2012.
- A Vesak Dharmadeshana (sermon) was delivered by Ven. Sannasgama Buddhapriya Thero, on 04.05.2012.
- An alms-giving progamme was held at Jayawardhena, Weligampitiya, Ja-ela on 03.12.2012.

7.2.2 Catholic Society

- A trip to Madu Palli was organized by the Catholic Society from 08th to 10th June 2012.
- Conducted Annual Christmas Mass on 18.12.2012 by Rev. Father Anton Jayananda of Saint Mary's Cathedral at Mattakkuliya.

08. Accounting Policies

1. General

Basis of preparation

The balance sheet as at 31.12.2012 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.

The financial statements are prepared on a going concern basis.

The financial statements are prepared considering the Accrual basis of accounting except for cash flow information by using the accrual basis of accounting.

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

The financial statements as presented by the Centre have taken care not to offset the assets and liabilities or income and expenses unless required or permitted by a standard.

Changes in accounting policies

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

Comparative information

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

Going Concern

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

Allowance for doubtful debts

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

2. VALUATION OF ASSETS AND THEIR BASES OF MEASUREMENT

Property, plant and equipment

a) Cost and valuation

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

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

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

Funding & Depreciation

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

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

Inventories

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

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

- Materials

  At actual cost on first-in first-out basis.
- b) Work-in- progress

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

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

- g) Consumables and Spares
- At actual cost

3. Trade and other receivables

Trade and other receivables are stated at the amounts they are estimated to realize, net of allowances for bad and doubtful receivables. Allowances have been made for bad and doubtful debts. Bad debts are written off when identified. In calculating fair value cost of capital is taken @ 20%

4. Cash and cash equivalents

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

5. LIABILITIES AND PROVISIONS

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 Completed Number of Years.)/2

Provision of Research Awards

Awards to Winning Research Engineers

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

a) Reimbursement of 60% of the award money among the Researchers involved in award winning Research Projects. Researchers would be identified as those, who were responsible for the submission of the applications for the awards.

b) Allocated amount is distributed among the team members proportional to the salary as at the date of application closing date.

c) This will apply to past awards and future awards.

d) For the past awards, reimbursement will be done only to the Researchers, who are at service of NERDC at present (but for calculation, all the team members will be considered.)

The Members of BoDs. noted the recent past award winning details given in the Annexe 1.

On the comments made by the Members of BoDs., the Chairman explained that the amount identified for Researchers, who are not presently not employed would be retained along with the 40% of the award money for future activities of NERDC in promoting the research culture.

Grants

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

Provisions, contingent assets and contingent liabilities

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

Borrowing costs

Borrowing costs are recognized as an expense in the period in which they are incurred except to the extent where borrowing costs that are directly attributable to the acquisition, construction or production of assets that takes a substantial period of time to get ready for its intended use or sale, is capitalized.

Creditors

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

COMPREHENSIVE INCOME STATEMENT

Revenue recognition

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

Revenue

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

Sale of developed Technologies

Revenue from the sale of developed products, is recognized when the significant risk and rewards of ownership of the products have passed to the buyer with the Centre retaining a continuing managerial involvement to the degree usually associated with ownership, and having effective control over the developed Technologies are sold.

Rendering of services

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

Construction revenue

Construction revenue is recognized in reference to the stage of completion, determined by taking into account the labour hours incurred to date as a percentage of total estimated labour hours for each contract.

Turnover based taxes

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

Gains and losses

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

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, Nonrefundable deposits, Registration of Suppliers, Sundry income, Damaged Stock disposal income; Gain on disposal of assets and overhead recovery based on accrual concept.

Differed income

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

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.

Research & Development

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.

9. Financial Position for the year ended 31.12.2012

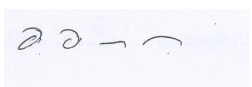
NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANKA

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

Financial Position for the year ended 31.12.2012

	2012	2011	2010
Assets			
Non-current Assets			
Property Plant & Equipment	475,928,202.17	496,481,849.95	504,048,405.94
Other Intangible Assets	160,400.45	136,880.45	113,584.45
	476,088,602.62	496,618,730.40	504,161,990.39
Current Assets			
Inventories	12,021,636.08	10,663,132.59	12,796,759.40
Trade Receivables	21,080,071.19	4,934,545.48	4,708,576.03
Other Current Assets	65,721,977.81	78,456,577.58	63,663,009.78
Deposit	47,879,600.98	61,368,555.78	50,745,004.98
Cash & Cash Equivalent	16,120,227.81	18,744,620.43	28,818,820.33
	162,823,513.87	174,167,431.86	160,732,170.52
Total Assets	638,912,116.49	670,786,162.26	664,894,160.91
Equity & Liabilities			
Capital Introduced	1,000,000.00	1,000,000.00	1,000,000.00
Capital Granted	191,276,714.26	198,093,044.01	191,056,096.79
Retain Earnings	(169,055,181.81)	(143,908,352.40)	(117,203,583.78)
Revaluation Reserve	354,805,770.31	350,225,917.20	349,743,581.49
Total Equity	378,027,302.76	405,410,608.81	424,596,094.50
Non Current Liabilities			
Provision for Gratuity	67,315,187.85	62,717,094.25	57,733,018.25
Deferred Income	167,000,895.17	170,212,660.26	155,857,527.46
	234,316,083.02	232,929,754.51	213,590,545.71
Current Liabilities			
Trade & Other payables	26,568,730.71	32,445,798.94	26,707,520.70
Total Current Liabilities	26,568,730.71	32,445,798.94	26,707,520.70
Total Liabilities	260,884,813.73	265,375,553.45	240,298,066.41
Total Equity & Liabilities	638,912,116.49	670,786,162.26	664,894,160.91

Eng. D R Pullaperuma
Chairman



Eng. D D Ananda Namal
Director General

D V S Perera
Finance Manager

10. Statement of Comprehensive Income Statement for the Year ended 31.12.2012

NATIONAL ENGINEERING RESEARCH & DEVELOPMENT CENTRE OF SRI LANKA

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

Statement of Comprehensive Income Statement for the Year ended 31.12.2012

	2012	2011	2010
Revenue			
Treasury Grants	147,441,000.00	139,687,000.00	137,642,000.00
Deffered Income	55,692,094.84	50,528,530.38	47,843,459.42
Other Income	19,771,444.89	21,968,763.41	23,820,897.05
Total Revenue	222,904,539.73	212,184,293.79	209,306,356.47
Expenditure			
Administrative cost	146,354,392.90	142,001,324.45	130,379,617.07
Other Expenses	101,627,296.41	96,762,608.90	85,484,552.38
Financial Cost	69,679.83	125,129.06	166,956.25
Total Expenditure	248,051,369.14	238,889,062.41	216,031,125.70
Surplus/(Deficit) for the period	**(25,146,829.41)**	**(26,704,768.62)**	**(6,724,769.23)**

11. Cash Flow Statement for the Year Ended 31.12.2012

CASH FLOW STATEMENT FOR THE YEAR ENDED 31ST DECEMBER 2012			
	2012	**2011**	**2010**
Net cash flows from operating acitivities			
Surplus/ (deficit) from ordinary activities	(25,146,829.41)	(26,704,768.62)	(6,724,769.23)
Non- cash movements			
Depreciation	77,613,781.65	72,450,217.17	70,081,492.39
Increase in provision for bad debts	(3,636,903.57)	430,200.88	(169,328.92)
Increase/(decrease) in payables	(5,877,068.23)	5,738,278.24	(5,565,172.56)
Increase /(decrease) in borrowings	(3,211,765.09)	14,355,132.80	(16,543,021.63)
Increase/(decrease) in relating to employee costs	4,598,093.60	4,984,076.00	1,389,352.50
(Gains)/losses on sale of property, plant and equipment	(10,070.73)	(51,999.00)	(1,394.24)
(Increase)/decrease in other current assets	24,865,051.08	(12,659,940.99)	(5,340,963.58)
Increase in investments due to revaluation	4,579,853.11	482,335.71	475,226.20
(Increase)/decrease in receivables	(12,508,622.14)	(656,170.33)	1,430,975.04
Net cash flows from operating acitivities	61,265,520.27	58,367,361.86	39,032,395.97
CASH FLOW FROM INVESTMENT ACTIVITIES			
Purchase of plant & equipment	(57,083,702.86)	(64,906,958.18)	(31,496,829.65)
Proceeds from sales of equipment	10,119.72	52,000.00	4,375.00
Net cash flows from investment activities	(57,073,583.14)	(64,854,958.18)	(31,492,454.65)
CASH FLOW FROM FINANCING ACTIVITIES			
Capital grant	48,289,000.00	82,257,610.40	34,308,000.00
Transferred to Research Income	(2,625,000.00)	(10,337,000.00)	-
Transferred to differed income	(52,480,329.75)	(64,883,663.18)	(31,300,437.79)
Net cash flow from financing activities	(6,816,329.75)	7,036,947.22	3,007,562.21
Net increase/(decrease) in cash & cash equivalents	(2,624,392.62)	549,350.90	10,547,503.53
Cash & cash equivalent at beginning of the period	18,744,620.43	28,818,820.33	69,016,321.78
Cash & cash equivalent at end of the period	16,120,227.81	29,368,171.23	79,563,825.31

12. Statement Change in Equity as at 31.12.2012

Note No. 8 Statement of Change in Equity as at 31/12/2012

	Capital Introduced	Government Contributed Capital	Capital from Other sorces	Re stated Revaluation surplus	Accumulated Surplus /(Deficit)	Total Net Assets/Equity	Re Stated Balance as at 31.12.2011
Re stated Balance as at 1/1/2010	1,000,000.00	68,063,444.71	119,985,089.87	349,743,581.49	(110,478,814.55)	428,313,301.52	434,653,019.23
Changes in accounting policies						-	
Restated Balances						-	
Changes in equity for 2010						-	
Capital Grant recived		34,308,000.00				34,308,000.00	11,940,000.00
Resarch Grant transferd to Comprehensive Income						-	
Capital Grant Transferred to Diffed Income		(31,300,437.79)				(31,300,437.79)	
Total comprehencive Income					(6,724,769.23)	(6,724,769.23)	(18,279,717.71)
Increase in revaluation reserve				(475,226.20)		(475,226.20)	
Balance as at 31/12/2010	1,000,000.00	71,071,006.92	119,985,089.87	349,268,355.29	(117,203,583.78)	424,120,868.30	428,313,301.52
Changes in accounting policies						-	
Restated Balances	1,000,000.00	71,071,006.92	119,985,089.87	349,743,581.49	(117,203,583.78)	424,596,094.50	428,313,301.52
Changes in equity for 2011						-	
Capital Grant recived		82,257,610.40				82,257,610.40	34,308,000.00
Resarch Grant transferd to Comprehensive Income		(10,337,000.00)				(10,337,000.00)	
Capital Grant Transferred to Diffed Income		(64,883,663.18)				(64,883,663.18)	(31,300,437.79)
Total comprehencive Income					(26,704,768.62)	(26,704,768.62)	(6,249,543.03)
Increase in revaluation reserve				482,335.71		482,335.71	(475,226.20)
Balance as at 31/12/2011	1,000,000.00	78,107,954.14	119,985,089.87	350,225,917.20	(143,908,352.40)	405,410,608.81	424,596,094.50
Changes in equity for 2012						-	
Capital Grant recived		48,289,000.00				48,289,000.00	82,257,610.40
Research Grant transferred to Comprehensive Income		(2,625,000.00)				(2,625,000.00)	(10,337,000.00)
Capital Grant Transferred to Differed Income		(52,480,329.75)				(52,480,329.75)	(64,883,663.18)
Total comprehensive Income					(25,146,829.41)	(25,146,829.41)	(26,704,768.62)
Increase in revaluation reserve				4,579,853.11		4,579,853.11	482,335.71
Balance as at December 31, 2012c/f	1,000,000.00	71,291,624.39	119,985,089.87	354,805,770.31	(169,055,181.81)	378,027,302.76	405,410,608.81

13. Notes to the Accounts for the year ended 31/12/2012

1. Prior Year adjustments

Ref No	Description	Balance before 1/1/2012	Balance before 1/1/2011	Balance before 1/1/2010	Effect to the Balance Sheet
	Balance B/F	24,792,432.34)	(6,249,543.03)		
1.1	Over provision of Legal expenses for the year 2011	25.00			2011 Accrued Expenses are reduced by Rs. 25.00
1.2	Over provision of Medical expenses for the year 2011	19,535.00			2011 Accrued Expenses are reduced by Rs 19,535.00
1.3	According to Board paper No 5-2012 item4.1 outstanding amount of Rs. 100,000.00 has been written off.	(100,000.00)			Debtors balance of year 2011 should be reduced by Rs 100,000.00
1.4	According to Board as per No 5-2012 item 4.2 outstanding amount of Rs. 10,830.40 has been written off.			(10,830.40)	Debtors balance of year 2009 should be reduce by Rs 10,830.40
1.5	Instead of Settling Ravindra Concrete works creditor it has been debited to Electrical maintenance account	3,000.00			2011 Creditor balance should be reduced by Rs 3,000.00
1.6	Instead of Settling I S Hardware creditor it has been debited to maintenance accounts -7,680.00	7,680.00			2011 Creditor balance should be reduced by Rs 7,680.00
1.7	Instead of Settling Malisha Hardware creditor it has been debited to Staff Welfare -2,200.00	2,200.00			2011 Creditor balance should be reduced by Rs 2,200.00
1.8	According to Board paper No 8-2012 item 3.2 outstanding amount of Rs.45,714.29 has been written off.	45,714.29			Debtors balance of year 2011 should be reduce by Rs 45,714.29
1.9	Instead of Settling Sampath Hardware creditor it has been debited to Building maintenance -2,216.00	2,216.00			2011 Creditor balance should be reduced by Rs 2,216.00
1.10	According to Board paper No 7-2012 item 4.3 un accounted income of Rs 490,000 is accounted and recoverable VAT is reversed then outstanding balance of Rs. 779,125.00 of Accessary Net Work (Pvt) Ltd has been written off.			490,000.00 (705,625.00)	Trade Debtors figure has to be increased by 490,000.00 and VAT receivable Account is debited with 73,500.00 and total outstanding from Accessory Net Work (PVT) Ltd is written off by Rs 779,125.00& VAT recoverable by Rs. 73,500.00
1.11	According to Board as per No 7-2012 item 4.3 value of Rs 18,000 taken for consumables is adjusted		18,000.00		Debtors balance will be increase by Rs 18,000.00

1.12	Advance received as transport charges on project no CIVIL/TT/45/2010 is now taken to income As at 2010 Present Position Inc 231425.76 284,345.76 Exp718.781.40 718.781.40 (487.355.64) (434.435.64)			52,920.00	Debtors balance will be increased by Rs 52,920.00
1.13	As per the board Decision No 3.1 of BM No 1-2013 2011 income on electrical department has been transferred to customer advance account		(2,002,100.00)		Customer advance account will be increase by Rs 2,002,100.00
1.14	RED /COM/96/2004 Under provision of income			32,226.67	Debtors balance will be increased by 32,222.67
1.15	As per Board Decision No 4.5 of BM No 12-2012 amount due from Pussellawa plantation was written off As at 2010 Present Position Inc 1.796,189.08 1,549,156.41 Exp 1,393,524.51 1,393,524.51 402,664.57 155,631.90			(247,032.67)	Debtors balance will be reduced by Rs 247,032.67
1.16	Income for project DFCI /com/45/2011 has been charged to Project No DFCI/com/43/2011	(18,000.00)			Working progress account will be reduced by Rs18,000.00
1.17	Under provision of salary arrears in 2011	496472.42			Salary arrears account is increased by Rs 496,472.42
1.18	CVL/PLOT/203/10 Cost as at 31/12/11 2010 balance 142,678.92 2011 balance 164,822.01 Research Expenditure is over charges and transferred to WIP	164,822.01	142,678.92		WIP account in year 2010 is increased by Rs 142,678.92 and 2011 WIP account is increase by Rs 307,500.93
1.19	As per the Board Decision No of BM 2-2013 National Water supply & drainage Board outstanding was written off. Project No CIVIL/31/08 As at 2010 Present Position Inc 430,983.44 256,630.74 Exp547,450.20 547,450.20 (116,466.76) (296,819.76			174,352.70	Debtors balance was reduced by Rs.174,352.70
1.20	C/12/766 Advance of Rs 67,500.00 as been received n year 2006 and this advance is cleared after Invoicing in year 2012 and the balance money is collected in year 2013			78,750.00	Debtors balance will be increase by Rs78,750.00

2. Deposits kept as securities for Guarantee Bonds

Guarantee is issued to	Bond No	Certificates Pledge as securities	Amount Rs	Bank	Amount Rs
Toyota Lanka (Pvt) Ltd	Bank Guarantee-15/2008	C/33734579-507908	100,000.00		75,000.00
Health Ministry	Performance bond - 3/2011	C/33734580-507909	100,000.00		1,126,000.00
		977156	18,112.56		
		532236/498516	1,000,000.00		
		532237/498517	1,000,000.00	BOC-Ja Ela	
Health Ministry	Guarantee bond-16/2011	532238/498518	1,000,000.00		4,504,000.00
		532239/498519	1,000,000.00		
		889873/508253	500,000.00		
		738260/8162945	1,000,000.00		
			5,718,112.50		

3. Temporary call deposits

Funds received as bond Income from NERDC employees who has left the services before completion of the bond is invested in State Institutions Temporary Surplus Trust Fund maintained at Bank of Ceylon on 30 th July 2012 Rs.8,994,089.90 .

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

4 . Trade & other Receivables

Debtors and other recoverable are stated at the value estimated to be realized net of provisions for bad & doubtful receivables. Debts balances were discounted at 20% .Debts which are collected during 2013 are not considered as bad debts.

5. Contingent Liabilities

5.1Formal inquiry is being held on the incident of medical claims using forged documents by Mr Sujith Ishantha Fernando, Motor Mechanic, Grade 111.It is expected that approximately a sum of Rs 100,000.00 will incurred.

5.2 Construction of Museums Building

As the dispute between the Contractor ,Ms S P Muttaiah & Sons and NERDC are still under investigation at the technical committee appointed by the Ministry of Construction, Engineering Services, Housing & Common amenities we are not in a position to decide exact payment due to the contractor. However we can justify minimum balance payment due to the contractor to be not more than Rs 3m.

6. Incentive Payment

Disbursement Amount

Board of Directors has approved the implementation of the above circular for NERD Centre, at the Board Meeting held on 20th April 2012.Board of Directors has approved the method of disbursement as per FC 380 at the Board Meeting held on 22nd May 2012. The approved "method of disbursement" Incentive was calculated on the commercial projects on the following basis.

Disbursement amount (% out of the profit) is dependent on the type of activities as shown in Table 2. This may be reduced by the management if the funds required to meet essential commitment of NERDC is found to be insufficient.

2 Disbursement Categories

Five categories are defined as

a) Direct project staff
b) Indirect project staff
c) Other income generating staff
d) Pool
e) Research Pool

2.1 Direct Project Staff

Staff of the project team who directly involved is considered as direct project staff.

2.2 Indirect Project Staff

Indirect project staff is the persons who contribute indirectly for the successful completion of the project and will be divided in to three sub categories as Management

a) Departmental indirect
b) Other indirect

DG, DDG(R&D) and DDG(S) are included as management and all the staff excluding clerks of the project executing department are considered as department indirect staff. Other indirect staff includes HR, Finance, Supply stores and TMD staff. Clerical staff of the research departments are considered as clerks of HR department for the provision of this scheme.

The direct and other indirect staff for each type of project is shown in Table 1. The management staff is considered for all the projects/activities and departmental indirect staff is considered for the projects/activities of the respective department.

Table 1: Direct and Other Indirect Staff

	Type of consultancy	**Direct Staff**	**Other Indirect Staff**
1	Industrial services and energy audits done by EMC	Team	Finance, HR dept.
2	Industrial services done by Electrical department	Team	Finance, HR dept
3	Construction of crematorium, incinerators, bio gas digesters etc	Team	Finance, HR dept, Supply and stores, TMD
4	Crematorium, Incinerator and Biogas Consultancy	Team	Finance, HR dept, TMD
5	Manufacture and Sales of products (manufactured based on research out comes)	Team	Finance, HR dept, Supply and stores, TMD
6	Fabrication and machining done by CME	Team	Finance, HR dept, Supply and stores, TMD
7	Civil engineering construction	Team	Finance, HR dept, Supply and stores, TMD
8	Civil engineering consultancy	Team	Finance, HR dept, TMD
9	Technology transfer fee	Research Engineer/s, Research TA/s, TMD staff	None
10	License renewal	Research Engineer/s, Research TA/s, TMD staff	None
11	Royalty from licensees	Research Engineer/s, Research TA/s, TMD staff	None

12	Royalty from NERD sold products, processes and construction	Research Engineer/s, Research TA/s,	None
13	Training programs	Resource persons, Coordinator, team members	Finance, HR

* In the HR dept. only the office staff is considered.

For the activities not mentioned in Table 1, direct and indirect staffs are decided by the DG in line with this table.

2.3 Other Income generating staff

The staff who involves in generating income by engaging activities which are not covered by FC 380 Circular such as staff involve in testing works.

2.4 Pool

All the staff of the NERDC inclusive of direct and indirect staff is considered as the pool

2.5 Research Pool

Funds in the research pool are used to award research staffs. An evaluation scheme will be formulated for this purpose.

3 Share Percentages

Share percentage is dependent on the type of projects/activities and given in Table 2

Table 2a: Share Percentage

	Type of consultancy		% out of shared amount					
		% share	Direct Staff	Indirect Staff	Dept indirect	Mgt.	Res Pool	Pool
1	Industrial services done by EMC	40	10	4	5	0.75	8	72.25
2	Energy audits done by EMC	40	10	4	5	0.75	8	72.25
3	Industrial services done by Electrical department	40	15	4	10	0.75	8	62.25
4	Construction of crematorium, incinerators, bio gas digesters etc	50	15	8	20	0.75	8	48.25
5	Crematorium, Incinerator and Biogas Consultancy	40	15	4	10	0.75	8	62.25
6	Manufacture, Fabrication and Sales of products (manufactured based on research out comes)	50	15	8	20	0.75	8	48.25
7	machining done by CME/WS	50	15	8	10	0.75	8	58.25
8	Civil engineering construction	50	15	8	20	0.75	8	48.25
9	Civil engineering consultancy	40	15	4	10	0.75	8	62.25
10	Training programs	50	15	4	15	0.75	8	57.25

Table 2b: Share Percentage for Technology Transfer and Royalty.

	Type of consultancy		% out of shared amount				
		% share	Research E/T	TMD	Department indirect	Mgt.	Pool
9	Technology transfer fee	50	15	15	10	1	59
10	License renewal	50	15	15	10	1	59
11	Royalty from licensees	50	20	15	5	1	59
12	Royalty from NERD sold products, processes and construction	50	20	-	10	1	69

4 Weighting Factors

For some of the activities the involvement of some category of persons are more valuable than the others and therefore following weighting factors are defined.

Construction/consultancy/Products

Engineers - 2

TA/TO - 1.5

Others - 1

Technology Transfer/Royalty

Research Engineers - 2

Research TA/TO - 1

Other Indirect

Supply staff - 2

Others - 1

5 Sharing Basis

5.1 Team Members

Amount is calculated proportional to salary, weighting factors and no of days involved

5.2 Indirect Staff

Amount is calculated proportional to salary, weighting factors.

5.3 Other income generating staff

The amount for testing staff is determined as per the following % from the profit of respective testing type.

Lamp testing – 0.75%

Environmental/Civil /renewable energy/agricultural engineering laboratory testing – 4.5%

Battery testing – 4.5%

The funds for the disbursement are taken from the pool.

5.4 Pool

Amount is calculated in a flat rate but penalties will be applied as given below

No any payment is done,

- If more than five no-pay leave (Un approved) has been taken in the previous year.
- If any disciplinary action has been found during the evaluation period.
- If more than 3 warning letters have been received during the evaluation period.

Penalty for No-pay Leave and Warning Letters

No. of No-Pay Leave	Penalty (LKR)
1	200
2	500
3	900
4	1400
5	2000

No. of Warning Letters	Penalty (LKR)
1	200
2	500
3	900

7. Other Income

According to the Board Decision No 4.5 of Board Meeting No 11-2012 Board has approved to appoint a Consultant to APCTT on behalf of NERDC Viz. Mr. G B Wimalarathne former Actg. General Manager and Deputy General Manager (Projects) for the requested period of two years, considering his experience and involvement in the sector, especially his engagement in ESD,RERED and the E-Friend Project. His professional involvement and expertise were reimbursed by APCTT through NERDC up to a maximum of US$2,500.00 during the assignment period of 2 years.

Payment reimbursement is as follows		Rs.
Amount received from APCTT		312,398.75
Less Expenditure by NERDC		987.91
Reimburse to consultant	95%	297,766.71
Sundry Income to NERDC		**14,632.04**

8. Accident Vehicles during the year 2012

Vehicle No	Date of the Accident	Estimated Cost Rs.	Insurance Agent*	Received Date	Amount Received Rs.	Received by NERDC/Agent
PD-8992	25/07/2012	108,304.00	SLIC	24/08/2012	108,304.00	Toyota Lanka
NB-3275	16/10/2012	24,220.00	SLIC	14/11/2012	24,220.00	Toyota Lanka
NA-6169	05/04/2012	88,420.65	NITF	09/10/2012	88,296.33	NERDC Re No 12-1538
KR-5435	4/11/2012	18,750.00	SLIC	24/11/2012	18,750.00	Toyota Lanka

*SLIC-Sri Lanka Insurance Corporation
NITF-National Insurance Trust Fund

9. Valuation of Museum Building, Exhibits for the Museum & development activities of the Technology Park

According to Board decision No 4.7 of BM No 11-2012 and 4.3 of BM No 12-2012 Valuation of museum building is as follows.

Technology Park	406,808.06
Museum Building	50,166,848.38
Demonstration Items	1,915,772.50
Research & development Expenditure	1,824,875.43

10. Provision for bad Debts

Provision for bad Debts are considered at their fair value . Cost of capital is considered at 20%.100% provision has been provided for some of the debts which considered un collectable.

Considered on fair value basis	**Cost**	**Fair Value**	**Prov. bad Debts**
Army Headquarters South Wing	1,806,357.21	1,254,414.	551,942.48
A E Predeep , 'Sanjeewa Nivasa'	12,000.00	8,333.33	3,666.67
Department Of Agrarian Development	94,777.14	65,817.46	28,959.68
Ministry Of Tra.Indus.& Sm.En. Develop.	1,004,602.88	697,640.8	306,961.99
North Colombo Teaching Hospital	270,786.65	188,046.2	82,740.37
Pelwatte Dairy Industries (Pvt) Ltd	371,152.65	257,744.9	113,407.75
Rhino Roofing Products Ltd	738.72	513.00	225.72
Teaching Hospital	195,428.58	135,714.2	59,714.29
100% Provision			
Hiriyala	637,056.40		637,056.40
University of Sri Jayewardenepura	214,121.54		214,121.54
Pathadumbara Pradeshiya sabha	221,513.00		221,513.00

11. Vehicle acquisitions in year 2012

Vehicles were allocated from under the procument of vehicles to government agency.

Vehicle No	Vehicle Type	Date of Acquisition	Amount Valued by Toyota	Insurance & License	Capitalized cost
WP PD-8992	Brand new Toyota Hilux	17/5/2012	7,500,000.00	133,691.42	7,633,691.42
WP NB-3275	Brand New Toyota Hiace	17/5/2012	10,500,000.00	135,314.33	10,635,314.33

14. 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 2012 in terms of Section 14(2)(c) of the Finance Act, No. 38 of 1971.

2. Financial Statements

2.2 Comments on Financial Statements

2.2.1 Accounting Deficiencies

The following observations are made

(a) In the year under review two vehicles have been given by the Dept. of National Budget. When accounting of insurance expenditure of Rs.309,000 has been capitalized. Thereby assets value is increased by Rs.309,000 and depreciation is increased by Rs.35,000.

Answer

According to LKAS 16 when calculating the cost of asset following definition is given in Sri Lanka Accounting Standards -2011 page No. 477

"b) any cost directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by Management"

Accordingly, 1st insurance & 1st Licenses paid for the vehicle received from the Treasury has been capitalized as this is required for vehicle to be road worthy. In subsequent year's insurance and license fees will be recurrent expenditure.

(b) Income received on lamp testing for the year 2011 has been accounted in the year 2010. This has not corrected in the year under review.

Answer

When preparing the year 2013 final accounts LKR.500,000 which has been declared as a income of year 2011 will be corrected as a income of year 2010.

2.2.2 Accounts Receivables and Payable

Following observations are made

(a) The balance of trade and other debtors accounts as at 31.12.2012 was Rs.11,748,223/=. Out of this, there were 04 balances of the total value of Rs.900,995/= was for 02-05 years and 03 balances of total value of Rs.823,620/= was for more than 05 years.

Answer

Rs.270,786.65 has been settled from the 4 outstanding balance of Rs.900,995 between 2 to 5 years. One outstanding amount to Rs.630,207.80 still remains. Out of three outstanding balances of Rs.873,680 older than 5 years, Rs.236,621.54 is settled. Remaining balance is Rs.637,056.40. This amount is due from Hiriyala Economic Centre. They have informed this amount will be settled soon.

(b) Debtor balance at the end of the year under review is Rs.22,719,303. Out of this amount, Rs.1,443,842 is older than five year and it is doubtful to receive this amount.

Answer

Out of this outstanding balance for more than 5 years, we have resolved Rs.214,121.59 by now and actions are being taken to settle the balance.

(c) Vat refund due from Dept. of Inland Revenue was unable to collect since 2005 amounting to Rs.29,159,692.

Answer

We have been trying to obtain a directive from Commissioner General of Inland Revenue Department. We have had several meetings with Assistant Commissioners and given our request in writing. Although, in every meeting they agreed to take actions, but up to now, no actions have been taken by them.

(d) Although a provision of Rs.129,937/= has been made to pay gratuity for 13 employees, no actions have been taken to settle them.

Answer

Out of the 13 ex-employees gratuity amount of Rs.129,937/-, we have cleared Rs.105,587/=. Balance amount of Rs.24,350/-will be cleared very soon.

(e) There were a total of 36 trade creditors to the sum of Rs.6,344,362 as at 31.12.12. Out of these creditors 14 have confirmed that balance totaling to Rs. 2,360,763/=. Out of the confirmed balance as 2 of creditors totaling to Rs. 475,390 did not agree with the balance.

Answer

Supplier	According to Books	According to the Supplier	Clarification
Hemsons International Pvt. Ltd.	**454,451.60**	**123,715.20**	**NERDC had accepted the goods on 08/01/2013**
A C Paul & Co. Ltd.	**20,749.00**	**436,001.90**	**On 12/12/12 we have settled Rs.436,001.90 and in the year 2013 Rs.20,749 has been settled. Therefore, our balance is correct.**

2.2.3 Non-compliance with Laws, Rules, Regulations & Management Decision

The following non-compliances were observed.

(a)	**Reference to Laws, Rules Regulation** Clause No.14 of Financial Act No.1971 No.38	**Non Compliance** Annual Report for the year 2011 is not submitted it to the Parliament.

Answer

Annual report for the year 2011 has been handed over to the Ministry on 27/02/2013.

(b)	Public Finance Circular No.438(2) dated 13 November 2009 and Financial Regulation 756,757, 771	Stock amounting to Rs.6,238,467 is not disposed.

Answer

Board approval has been obtained to dispose the non moving items except the tractor engines and accessories. Accordingly, those items have been disposed. Actions are being taken for tractor engines and the related parts.

(c)	Public Finance Circular No.25 dated 29th June 2004 and Public Finance Circular No.PF/PE/9 dated 26 June 2006	Without the permission of Finance Minister and line Minister Rs.2,746,672 is deposited in a fixed deposit.

Answer

These fixed deposits are withdrawn now.

2.2.4 Transactions not Supported by Adequate Authority

(a) Advances made by customers on different projects have been deposited in seven day call deposits since 2004 amounting to Rs.38,136,018 without using in projects, but Board approval has not been obtained. In the year under review also Rs.23,500,000 is deposited without the approval of board.

Answer

Board approval has been obtained for seven day call deposits made up to February 2012 on 22/02/2013. In future, board has granted the permission for the methodology of deposits. Each month Board of Directors is informed with the transactions.

(b) An incentive scheme has been introduced in the year under review on a board decision, Rs.3,189,885/=, (40.38% of the profit of commercial projects) has been paid as incentive. Approval from the Department of Management Services has not been obtained for this Incentive Scheme.

Answer

As we have implemented the Public Finance Circular No.380 dated 19.01.2000, it is not necessary to obtain the approval from the Dept. of Management Services. In this circular, basis of distribution of benefits are defined and methodology has to be determined by the Centre.

(c) Outstanding amount of Rs.1,357,053 from debtors has been written off in the year under review without going for legal proceeding on a board decision. For this Treasury approval has also not been obtained.

Answer

Out of this, Rs.577,928/= is written off due to the error in calculation done by the Centre.

The amount due from M/S Accessory Net Work Pvt. Ltd. is written off, since, presently there is no Company to communicate with them and get this matter resolved. However, we have followed all necessary steps to get back this amount but presently, the Company is closed, according to the information received. Therefore, it was decided that the mould, which was given by the client to modify, to be used as a raw-material for requirements of NERDC.

3. Financial and Operational Review

3.1 Financial Results

According to the financial statements presented, the working of the Centre for the year ended 31st December 2012 had resulted in a deficit of Rs.25,146,825 as compared with the corresponding deficit of rs.26,704,768 for the preceding year. As such the deficit in the financial results for the year under review shows an improvement of Rs.1,557,943. This improvement is resulted by the increase of government grant by Rs.10.5 Mn.

4. Operating Review

4.1 Performance

Following observations are made.

(a) It was observed that the 21 projects estimated to Rs.7,885,000/= in the Action Plan of the year review were not implemented.

Answer

The 21 projects mentioned in this report can be summarized as follows.

- **Non-commenced research projects and the other activities.**
- **Although, some activities were initiated, performances were not achieved as expected.**

Although, there were 68 Engineers should be available according to the cadres, there were only 26 Engineers working in the relevant year. This Action Plan was prepared with the intension of recruiting at least 12 Engineers in the review year. Although, we made several attempts to recruit Engineers for the last several years, it was not successful to recruit new Engineers as well as retain them too, because of the low remuneration package for the Engineers. Accordingly, due to non-availability of Engineers, some of the above projects could not be implemented.

Due to lack of Engineers, number of projects to be carried out and the other activities of the existing Engineers were increased; the targets of some projects could not be achieved.

Execution of some activities is depending on the requirements and the contribution of the outside Institutions. Integrated projects with the Presidential Secretariat and the Civil Defence Force, training of officials of Vidatha Centres, implementation of housing scheme using the NERDC technologies with the Ministry of Engineering Services, can be shown as examples.

(b) Out of 83 completed projects during the period from 2004 to 2011, following observations were made.

41 final research reports have not been submitted, not prepared Technology Transfer Packages for 72 projects, not transferred technologies for 73 technologies, non-utilization of research outcomes of 55 projects and 25 Nos. of technology utilization projects.

Answer

Although, final report should be submitted for each and every research project, such an action has not been taken. However presently, arrangements have been taken to prepare the proper final reports for all the projects carrying out at the Centre. As, there were 25 Engineers, who left/resigned the Centre, it was difficult to obtain the final reports.

Presently, it is making maximum effort to rectify this situation in the future. Thus, presently, a considerable number of final reports are being prepared.

It is not required to prepare a Technology Transfer Package for each and every project. Technology Transfer Packages are prepared only for new technologies. Presently, Technology Transfer Packages are being prepared for few such projects.

Technology Transfer is not done for the projects, which are conducted for collection of data for future research, and for improvement of already transferred technologies. Technology is transferred only for new technologies developed.

It is the practice that the total research outcomes are not transferred to the technology transferees. They utilize only the technologies, which have been transferred (originated as outcomes of the research). But, the researches carried out by us are relevant to upgrade the future technologies and to improve knowhow of research projects.

New technologies have been introduced based on these projects and the technology transfer packages for these technologies have been prepared and transferred to the transferees and presently, these transferred technologies are used in different fields of applications.

(c) There were 6 projects started and abandoned and the cost incurred for them was Rs.1,059,760/= in the review year.

Answer

As per the decision taken by the RPC, there were two project proposals refused due to the nature of projects and there are 3 projects, which have been temporarily suspended due to impractical and not allied with the action plan. The details are as follows.

CVL/RES/88/2011	**Successfully completed**
CVL/RES/81/2011	**Project Works have been completed and ready for field trials.**
APHT/RES/108/2011	**The RPC has decided to discontinue these projects**

APHT/RES/92/2011 — **after the preliminary observations.**

APHT/RES/85/2011
CVL/RES/78/2011 — **These two projects should be carried out in collaboration with the other Institutions with their contribution but these projects have been stopped due to lack of cooperation as expected by them.**

The major share of the expenditure of these projects were the labour.

4.2 Inefficiencies of the Management

Arrangements have not been made for 21 items to be disposed in the year 2011 as recommended by the Verification Board.

Answer

Although, the Members of BoDs. granted approval on 28/3/2012 to dispose these items, the Committee appointed for this, have not disposed, properly. However, these items have already been disposed, by now.

4.3 Budgetary Control

In the year reviewed, the deviation between the estimated cost and the actual cost is vastly ranged from 80% to 221%. Hence, it was observed that budget has not been utilized as a productive management control tool.

Answer

The projects, which caused for above conclusion (as per your previous audit review) are given below.

Project	Estimated	Actual Cost	Deviation	Percentage
(i). Temperature Controllable Biomass Bakery	740,000	2,375,199	1,635,200	221
(ii). Construction Operation Testing of 2 Stage Aerobic Digester	185,000	506,139	321,139	174
(iii). Repair of Damaged Gas Holders – Digesters	208,098	591,476	383,378	184
(iv). Rectification of Plug Flow Digester Jathika Pola	116,546	222,675	106,129	91
(v). Construction of proposed Nurses' Quarters for Pollonnaruwa Hospital	22,724,000	24,526,010	18,222,010	80

(i) & (ii). These projects are research projects, for which only the direct costs are considered for estimation (materials, external services, overtime, transport, etc.). Man days are counted, separately. Therefore, the estimated cost reflects only the direct cost but you have counted the actual cost, which includes labour cost and overhead. The cost incurred for these particular two projects are Rs.645,000/= and Rs.164,675/=, respectively excluding labour cost and overhead costs. Therefore, there is no actual cost exceeded from the estimated cost.

(iii) This project was conducted by the Centre for the Waste Management Authority, Sri Lanka. In this project, there were existing 16 Gas Holders to be renovated and waste residues to be removed using Bachoe Machine at the Project site, Muthurajawela. It is accepted that the actual cost has been exceeded from the estimated figure.

In 2005, originally, the system of 16 Nos. of Anerobic Digesters with the capacity of 40MT x dia. 20 Ft. was constructed in Muthurajawela, spending Rs.33M by the Centre. The site was not in operation due to non-existence of a proper mechanism to provide sorted organic wastes to the site for few years, and therefore the Waste Management Authority has undertaken to operate the system. In the year 2012, Waste Management Authority sought assistance from the NERDC to make the system operational. The estimate was prepared based on the visual observations (using human labour) as it was difficult to conduct a comprehensive inspection by removing each and every Gas holder using a Bachoe Machine.

However, when the Gas Holders were removed it was observed that the damaged inside was more than we anticipated and the Digesters were filled with various Plastic, Polithene, etc. other than the organic wastes. This situation slowed down the unloading process, lengthening the period of hired machinery requirement un-expectedly. Accordingly, we asked for an additional payment of 25% of the previous estimate from the Waste Management Authority. However, to complete the work as required, this additional payment also was not adequate.

However, after these repairs carried out, the Waste Management Authority agreed to improve two biogas digesters for further research and to improve the rest of the biogas digesters on the commercial basis with the involvement of NERDC.

The Management has already instructed the Engineers and the Scientists to be cautious when preparing the future estimates in a risk for judgment.

(iv) The assistance of the Centre was requested by Sri Lanka Sustainable Energy Authority in rectifying the defects occurred when developing the plug flow type biogas digester at Jathika Pola.

In reply to their request, the NERDC submitted an estimate for the repair of underground digester constructed, which is the largest plug flow type biogas digester constructed in the island. As, there was no other Institute in the public sector, which can provide expertise on specialized technology for this type of work, the Centre decided to undertake to rectify this project.

Finally, it was observed that the actual cost of the repair has exceeded the estimated cost at the completion.

When starting the repair work, it was observed that there was a difficulty in carrying out the repairs by a group of workmen inside the biogas digester at once. Although, there were 12 days estimated, 20 days had to be spent in this regard. While constructing, it appeared that there was a big problem in the Digester and several additional layers of plastering were made to rectify.

Although, the repairs of this type of digesters are complicated, the NERDC workforce has successfully completed this system in the difficult working conditions. Presently, the rectified system is working, successfully. Due to this type of complicated repairs, our workforce was able to obtain skilled training, which will be advantageous for constructing similar type of Biogas digesters in the future.

However, the actual cost was exceeded the estimated cost, due to lack of contingencies inherited to this. So, that the relevant officials were advised to prepare this type of estimates, considering the risk for judgment in the future.

(v) The variation percentage calculated here is incorrect. The correct value is 7.92%.

$$\frac{24,526,010 - 22,724,000}{22,724,000} \times 100 = 7.92\%$$

This project is a construction project and forwarding estimates based on the extra works is common practice when carrying out construction projects. The extra works, which had been carried out in this construction were with the approval of the client, and the new bill value for this was Rs.25,769,608.84. Accordingly, this is exceeded the actual cost of Rs.24,526,010/=

4.4 Operational Inefficiencies

(a) Although, the main tasks of the Centre are research and development, lower than 10% of the total expenditure of the allocated budget, had been used for R&D activities, for the last few years.

Answer

The R&D expenditure had been valued by you, considering only the direct cost (materials, overtime, etc.) But, the salaries, wages, overheads, equipment expenditure for R&D, etc. have not been accounted here for the R&D. Accordingly, total R&D expenditure is about 92% of the allocated.

4.5 Uneconomical Transactions

Following observations are made.

(a) The Battery Testervalued for Rs.11,949,980/= had been purchased in order to enhance the operation of battery testing services efficiently. With this facility, the revenue generated in the year 2011 was Rs.355,060/= and for the reviewing year, the net income generated was Rs.7,125/=. Therefore, the income generation has lowered by 98% compared to the previous year. It was revealed that the major reason for this decrease is that one of the main clients, who gets the services from NERDC testing facility, has dealt with some other Institutions in this regard, due to delay in submitting test reports by the NERDC.

Answer

The NERDC has established Automobile Battery Testing Facility as a supportive service to the SLSI for implementing their Import Inspection Scheme (IIS). Under this scheme, the NERDC has done a great contribution to the SLSI. During last few years, we received a considerable number of batteries for testing and the Centre provided a great service, successfully. Since, the volume of samples received had been increasing, the resources available were not sufficient to fulfill the requirements on time. Therefore, the tests had been carried out on first come first serve basis. After receiving the samples, it took about 6 months delay for commencement of the battery testing. Then, it was a very big issue to the SLSI. Therefore, arrangements were made to purchase a new Automated Battery Tester with the improved facility such as more accurate and efficient for the sum of Rs.11,949,980. Whatever the situation at the end of the last quarter of 2011, the number of samples receiving to NERDC for testing has become reduced and in the year 2012, it has been reduced to 04 numbers of samples. The main reason was that after inspecting the battery manufacturers by the SLSI, they had implemented a new scheme for "Factory Authorization" by visiting the particular country and inspecting

the factories. This has caused to decrease receiving the considerable number of batteries for testing to the NERDC.

Since, the availability of very limited resources as mentioned above, there was a queue for battery testing in the year 2011. Some samples, received during the year 2011 were tested in the year 2012. However, the revenue had been received in the year 2011, which reflects as higher volume of income for the year 2011, and it had affected on the revenue of 2012.

Therefore, the income in the year 2012 should be corrected to read as follows.

The number of battery samples tested in year 2011	**-**	**54**
Accordingly, the income in the year 2011	**-**	**Rs.1,067,150.00**
Number of battery samples tested in the year 2012 - 22		
Accordingly, the income in the year 2012	**-**	**Rs.441,750.00**
Accordingly, the difference in the income		
in the year 2011 with respect to the year 2012	**-**	**Rs.625,400.00**
	-	**Rs.58%**

(b) Although, the Centre had incurred Rs.203,850/= to obtain the ISO – 9001 certification, there had been no certificate received as at 31/12/2012.

Answer

The amount was spent not to obtain the I.S.O – 9001 certification but to establish a Quality Management System as per the I.S.O. 9001 at the Centre. The preliminary works for establishment of this system has been fulfilled by 31st December 2012 and 80% of total affairs have already been completed, by now.

4.6 Idle and Underutilized Assets

Following observations are made.

(a). The Museum Building, which had been revalued to the value of Rs.50,166,848/= in the review year, had not been utilized even after 7 years of completion of the building.

Answer

Time taken for acquiring the reasonable level of exhibit items for the opening of the Museum was very long and presently, the Centre has acquired the required number of items and this Museum was opened on 14th October 2013.

(b). Although, the Centre had purchased the exhibit items to the value of Rs.9,695,714/= for the Museum, arrangements have not been made to open the Museum for public.

Answer

It was opened on 14th October 2013.

(c).There were 2244 items to the value of Rs.6,238,467/=, idling for more than 7 years in the Main Stores without moving. In that stock, there were 57 tractor engines and spare parts purchased in 1999/2000 to the value of Rs.2,554,387/=, which have been in the Main Stores for more than 13 years.

Answer

Hoping to dispose these items in the near future.

(d). Although, the Colour Printing Machine to the value of Rs.1,850,000/= had been purchased for printing the Annual Reports and the Advertising Notices in the Centre, and 1,050 coloured leaflets were printed from the outside company. There was no single paper printed during the year 2012 using the Colour Printing Machine.

Answer

This printer was purchased not only for printing the Annual Reports of NERDC but with intention of printing the required coloured leaflets. Further, unnecessary delays to follow the procurement procedures, when urgency arises for printing work from outside parties, are the major reasons to compel the purchase of a new Colour Printing Machine.

(e) The equipment purchased by the following Departments, have been idling for a long period.

Dept.	Item	Value Rs.	Duration
(i). Design, Fabrication & Consultancy to Industry	Tri Axial Vibration Meter	1,923,950	06 years
(ii). Electrical, Electronics & Mechatronics	Battery Tester	11,949,980	01 Year
(iii). Energy & Environmental Management Dept.	Carbon Monoxide Analyzer	2,607,700	04 Months
(iv). Civil Eng. Dept.	Computer Control Universal Testing Machine	1,795,000	01 Year

Answer

(i) This instrument has been purchased to analyze the vibration levels of machineries as per the requests made by the Industries and also the research purpose of the Centre. The particular instrument had not been used for the industrial applications during the last few years since there were no outside requests for such services. But, it was used to analyze the vibration levels of NERDC research activities. Even though, the frequency of utilization of such equipment is lower, it is more advantageous to have such specific/un-common instruments in a Research Institution like NERDC for present and future research activities.

(ii) This equipment is being used, presently.

(iii) Even though, this instrument was purchased in October 2012, the required training was given to the Centre by the Supplier in November 2012. Therefore, it is unfair to state that this equipment had been with us for a long period without use. Presently, this machine has been used for environmental monitoring measurements.

(iv). There was a delay to commence few proposed projects in the Department of Civil Engineering due to lack of Civil Research Engineers. Therefore, there were no requirements for using this equipment. However, this machine is required for research activities, and expected to utilize in the future.

4.7 Identified Losses

The stock to the value of Rs.439,427/=was written off as the damaged stockwithout having a proper approval.

Answer

In the 2011 Verification Report, the value of Rs.423,054.28 and in the year 2012, the value of Rs.16,941.62 stocks had been removed from the stocks of the Main Stores and arrangements have been made to dispose the same. This action has been done with a proper approval.

4.8 Staff Administration

Although, the main activity of the Centre is research, there were 43 staff vacancies available. The details are as follows.

Designation	Approved Cadre	Actual Cadre	Vacancies
Senior Research Fellow	01	-	01
Research Fellow	05	03	02
Principal Research Engineer	13	08	05
Senior Research Engineer	16	01	15
Research Engineer	21	09	12
Engineers	07	01	06
Technical Officer	05	04	01
Technical Assistant	15	14	01
Total	83	40	43
	==	==	==

Answer

The Centre has taken measures to recruit the required Research Engineering Staff and the Technical Staff. In every year, 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. Arrangements were made to fill the approved cadre according to the cadre vacancies available in the year 2012. Accordingly, 03 Research Engineers were recruited, and out of them, 02 Research Engineers have already left the Centre. There was no single application received for the Post of Senior Research Engineer. We have observed that the main reason for not being able to retain the Research Engineers is due to the to the low salary scales offered to them to commensurate to their academic qualifications further the location of the Centre, being far away from Colombo is another reason for this issue.

It is observed that the number of applicants applying for disciplines such as Civil Engineering and the Electrical, Electronics Engineering, which are the most relevant to the Centre at this point of time are very few or non-existence. During the year 2012,

there had been only one application each received for post of Senior Research Engineer and the Research Engineer in Civil Engineering discipline but no one was present for the interviews. In the case of Electrical and Electronic disciplines, although there were 03 Engineers recruited, 02 of them have already left the Centre. As per the above reasons, the Centre has not been able to progress the research and development in these engineering disciplines. Further as a result of our not been able to recruit Senior Research Engineers for the existing 15 vacancies in the middle level cadres, 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 the new Engineers at the Centre therefore; it was difficult to achieve the targets of the Action Plan prepared by the Centre.

5. Systems and Control

The defects on systems and controls found during the audit were forwarded to the Chairman of the Centre from time to time. Attention should be paid to the following managerial areas.

(a). Project Estimation and Management

Answer

Arrangements would be made to minimize the overhead factor. It is a common practice that time duration is elongated for carrying out of research projects. However, the effort would be made to minimize the project duration for completion. Even though, due to lack of Research Engineers at the Centre, the work load for a single existing Engineer has been over capacity and the project duration was extended. Arrangements would be made to evaluate the out dated projects and to terminate same projects, which cannot be carried out.

(b). Debtors

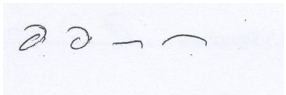
Answer

It had been observed that it was a difficult task to recover balance payments when doing projects with the Government Institutions. Attention is drawn on it, regularly.

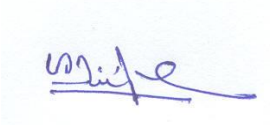
(c). Control of Vehicles

Answer

Presently, arrangements have already been made to implement proper system related to vehicle accidents.



Eng. D D Ananda Namal
Director General



Eng. Anura Wijayapala
Chairman