



ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION
(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)
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ERDA NEWS

A Research, Development & Testing facility of the Electrical Mfg. Utility Industry, Recognised by DSIR & NABL (DST), GOVT. OF INDIA, BIS, DGFASLI, UL, TUV SUD Group; Intertek (ASTA-BEAB) U.K.

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India Power Award - 2011

ERDA has been conferred the prestigious **India Power Award - 2011** by the Council of Power Utilities (CPU) for the "Excellent work in the area of test, evaluation, certification and R&D related to electrical products and system" category. Shri T.P. Govindan, Director, ERDA received the award on behalf of the association from the guest of honour Ms. Alison Barde, Director, Aqua-Media Intl, UK, in a glittering function held on November 24, 2011 at the India Habitat Center, New Delhi. The award was given to ERDA based on its outstanding service to the customers for over 3 decades.



Shri T.P. Govindan, Director, ERDA receiving the Award

ERDA is a not-for-profit professional research organisation of the Indian electrical industry and utilities. It was established with the support of Council of Scientific and Industrial Research

(CSIR), Govt. Of India and the state Government of Gujarat in the year 1974 at a twenty five acre land provided by state Government of Gujarat .It has now grown to be a premier test and research organisation in India in the field of electrical engineering. It has more than three hundred strong qualified manpower and has several state, national and international awards to its credit. This award is another feather in cap for ERDA.



3rd Best Paper Award

ERDA Scientists have bagged the 3rd Best Paper Award in the recently concluded 7th International Technical Conference on Cables and Wires "CABLEWIRE - 2011", organised by IEEMA at Mumbai for their paper titled

“Development of zero halogen nano dielectric material for cables”. This paper is based on a joint research project with an industry participation and partially supported by state Government of Gujarat. The paper has been authored by Dr. V. Shrinet, N.R. Pandya, J.P. Sheth, T.P. Govindan and Priten Shah (Shakun Polymers).



Mr. J.P. Sheth receiving the award at Cablewire -2011

USAID – Sponsored ‘Water Energy Nexus’ programme

ERDA had participated in the United States Agency for International Development (USAID) sponsored programme called Water Energy Nexus (WENEXA). This programme has been jointly conceived by USAID and Ministry of Power, Govt. of India. The main objective of WENEXA, as a part of this project, has been to develop a pilot project to field – try an Agricultural Demand Side Management (AgDSM) Model at the Doddaballapur Sub – Division of Bangalore Electric Supply Corporation (BESCOM).

Under this programme, BESCOM (Utility) & Enzen (ESCO) prepared a business partnership model to get savings after replacement of IP sets with new high efficiency pump sets. The main objective in the program has been to accurately measure the energy savings over a period of 10 years after replacement of the pump sets. With this objective, M/s Tetra Tech (Erstwhile P. A. Consulting) engaged Electrical Research & Development Association (ERDA) as a third party independent agency to prepare methodology report and to carry out the baseline study. The baseline is the month wise agricultural consumption of existing IP sets for a period of 12 months. A base line has been

established before replacement of the pump set for the period from November 09 to October 10 (One year to take care of seasonal effects). A total of 604 IP sets at Doddaballapur sub-division were considered for the study. ERDA had successfully completed the baseline study and submitted the report.

M/s. Tetra Tech had organized a one day national conference on “Agriculture Demand Side Management: Challenges and Learnings”- Water Energy Nexus Activity (WENEXA II) project on 12th July, 2011 at New Delhi. The conference was inaugurated by Shri Devendra Singh (Joint Secretary - Ministry of Power) and Mr. Jeremy Gustafson (Director, USAID - Clean Energy and Environment). The conference was attended by a large number of senior professionals working in the area of energy, water, agriculture, surface irrigation, ground water, food and finance sector of the country.

During the conference, Mr. U. C Trivedi (Joint Director, ERDA) presented the findings of the base line study with challenges & solutions. ERDA Engineers involved in the study were honoured on the occasion.



ERDA team with their memento: (L to R) Mr. Kinjal Kothari, Mr. U.C. Trivedi, Jt. Director, Mr. Shailesh Modi and Km. Shreya Bhatt

ENHANCED TEST FACILITIES

1. High Voltage Test Facility at ERDA – Savli

ERDA has established a world class High Voltage testing facility for testing electrical products up to 400 kV class at Savli, near Vadodara. This project is supported by the Industry Commissionerate, Govt. of Gujarat. This High Voltage laboratory is equipped with fully automated modernized test system. The

test facility is accredited by NABL, Govt. of India, BIS, ASTA – BEAB, RDSO and so on. The testing activity at this laboratory has been started from April 2010 and so far it has provided testing services to multinational industries, small scale industries and utilities. The test facility is along side the 120 kA, online short Circuit Laboratory at Savli. The major advantage of having these test facilities side by side is that the High Voltage Impulse Testing and Short Circuit Testing of various products can be conducted at the same place.

List of Major equipment:

- 1600 kVp, 80 kJ, Impulse Voltage Generator – HIGH VOLT- Germany with 14 bit Measuring System.
- 800/1600 kVp Damped Capacitive Impulse Voltage Divider
- 700 kVrms, 105 kVA, High Voltage Transformer.
- 700 kV High Voltage Divider – HIGH VOLT – Germany.
- 750 mm Sphere-Sphere Gap.
- Artificial Rain fall Equipment.

Tests that can be conducted:

- Lightning Impulse Voltage Withstand Test
- Chopped Lightning Impulse Voltage Withstand Test
- Multiple Chopped Impulse Voltage Test
- Switching Impulse Voltage Withstand Test
- Dry /Wet Power Frequency Voltage Withstand Test
- Transmitted Over Voltage Test
- Radio Interference Voltage Test
- Visible Corona Test
- Steep Wave Front Test on Insulator
- Bias Voltage Test with Lightning and Switching Impulse Voltage on Circuit Breakers

The following products upto 400 kV have been tested in this laboratory so far:

- Current Transformers
- Potential Transformers
- Distribution/Power Transformers
- Insulators
- Bushings
- Isolators
- Circuit Breakers
- VCB/GCB Panel

- Ring Main Unit
- On Load/Off Load Tap Changers
- Transmission Line Hardware
- HT Capacitors
- HT Cables



1600 kVp, 80 kJ, Impulse Voltage Generator



700 kV, High Voltage Transformer



400 kV Current Transformer under High Voltage Test

2. Automatic Absorption Spectrophotometer

In its endeavour to serve its valued customers even better, ERDA has augmented its analytical facilities by adding the sophisticated Atomic Absorption Spectrometer (AAS). Atomic absorption spectroscopy (AAS) is a spectroanalytical procedure for the quantitative and qualitative determination of chemical elements employing the absorption of optical radiation (light) by free atoms in the gaseous state. AAS has got a wide range of industrial applications varying from pharmaceutical to electrical and electronics. Determination of hazardous substances like Mercury, Lead, Cadmium etc which are regulated in electrical and electronic equipment, is one of the many applications of AAS. The European Union (EU) RoHS directive prohibits the above mentioned substances and hexavalent chromium and two types of brominated flame retardants, polybrominated biphenyls (PBB) and polybrominated biphenyl ethers (PBDE) from being used in electrical and electronic equipments. Conformity of a product to these regulated substances will boost its export potential considerably.

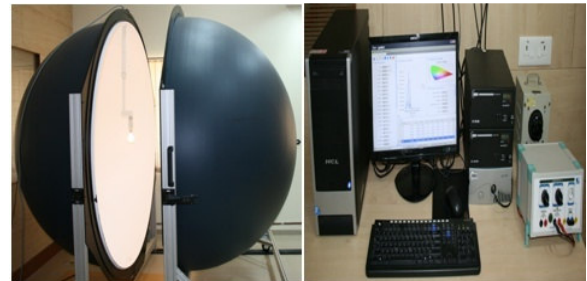
Another application of Atomic absorption spectroscopy (AAS) is the determination of Mercury level in fluorescent lamps (IEC 62554). Electrical Research and Development Association, ERDA has acquired recently, Perkin Elmer make Atomic absorption spectrometer AANALYST 400 with Mercury Hydride System along with other sophisticated

instruments for the above mentioned analyses. By this ERDA can serve the electrical and electronic industries to meet their analytical requirements more efficiently.



Atomic Absorption Spectrometer

3. Computerized Spectral flux Measurement system from Labsphere, U.S.A.



ERDA has established a new test facility for testing of LED-based luminaire as per LM 79 and LED-based lamps. Further, testing as well as calibration of GLS Incandescent lamps, CFL, TFL, HPSV, HPMV, Metal Halide, Miniature lamps, Automobile lamps & LED's lamps can be under taken by using this facility. The following parameters can be measured.

- Total Spectral Flux (Watts/nm).
- Total Radiant Flux (Watts).
- Total Luminous flux (Lumens).
- Colour Co-ordinates.
- Correlated Colour Temperature (CCT).
- Colour Rendering Index (CRI)

The main benefit of this facility is that it does away with the need to get every year calibration of different lamps of different rating from NLP, New Delhi. It is possible to make all types of standard lamps using only one calibrated lamp.

4. Computerized system for complete type testing of Double capped T5 fluorescent lamps as per IEC:60081



Automated computerized system for T5 lamps testing



Automated computerized life test unit for T5 lamps testing

With the addition of this facility, it is now possible to carry out complete type testing of High frequency (>25 KHz) operated T5 lamps of various ratings ranging from 14 W to 54 W including life test.

INTERACTIVE PROGRAMME

ERDA at Customer's Doorstep

1. At Jaipur

In yet another step forward towards understanding its customer better and marketing its services, ERDA organized "ERDA at Customer's Doorstep - An Interactive Programme" at Jaipur on 15th November 2011. Shri Anil Saboo, Managing Director, Elektrolites

(Power) Pvt. Ltd., Jaipur graced the programme as Chief Guest. Dr. P.A Krishnamoorthy presided over the function and gave a background of the programme. The inaugural session was followed by technical presentations by senior officers from ERDA. Dr. P A Krishnamoorthy spoke on ERDA's Quest for Excellence and Evaluation of Cables. Dr. G.S Grewal spoke on Certification Testing of Insulators & Conductors. Shri Umesh Soni spoke on Testing and Calibration Facilities for High Voltage Products at a Glance.



Inauguration of the programme



Felicitation of the Chief Guest, Shri Anil Saboo

2. At Kolkata

A customer interactive programme was organized at Kolkata on 21st December 2011. Shri S.K. Dutta, CEO, EMC Academy graced the function as Chief Guest and urged the participants to make use of standard test facilities available at reputed laboratories like ERDA and avoid compromising the quality of product. Nearly 30 participants from nearby industries attended the meet.



Chief Guest Shri S.K. Datta delivering the inaugural talk



Dr. G.S. Grewal, Dy. Director, ERDA explaining ERDA's capabilities

PARTICIPATION IN EXHIBITION

ELEKTROTEC' 2011

ERDA has participated in the “**ELEKTROTEC 2011**” Exhibition organized by The Coimbatore District Small Industries Association (CODISSIA), held at Codissia Trade Fair Complex, G. V. Fair Grounds, Avinashi Road, Coimbatore during 1st to 4th September 2011.

Prototypes of various technologies developed through its in house R&D work were on display. Similarly information about various services offered to the industries were provided to explore ERDA activities in the southern region of India. More than 300 Visitors from Industries, Utilities, Academia and consultants, students of engineering colleges, visited and interacted with ERDA.

Scientific & Industrial Testing & Research Centre (SITARC), Coimbatore has shown interest in shaking hands with ERDA for expansion of services offered by ERDA to industries in the south India region.

Students from various Engineering colleges have shown interest in the technologies developed by ERDA like LED based stand alone lamp, Bird deterrent compound and heat shrinkable polymeric material etc.

A brief presentation on ERDA's activities was also made for the benefit of the delegates in the conference organized as a part of the exhibition.

The response from the visitors and delegates was quite encouraging.



Visitors at our stall

INDIA ELECTRICITY' 2011

ERDA also participated in the “INDIA ELECTRICITY 2011” Exhibition organized by The Federation of Indian Chambers of Commerce & Industry (FICCI) and Ministry of Power Government of India, held at NSIC Exhibition Complex, Okhla Industrial Estate, New Delhi during 12 - 14 October 2011.

As was done in the other exhibitions, prototypes of various technologies developed through its in house R&D work and details of various services being offering to the industries was on display during the exhibition.

The response from the visitors was quite encouraging.

Open House at ERDA

The 'OPEN HOUSE 2011' programme was held on 22nd November 2011. In this, 250 students and 10 teachers from 3 schools visited ERDA and witnessed specially arranged demonstrations of various models. The visiting students and teachers showed keen interest in the programme.



Students in the Lamps & Luminaires Section

Annual Day Celebrations at ERDA



The Chief Guest Lt. Col. V.I. Trivedi (Rtd.), and Shri T.P. Govindan inaugurating the function by lighting the lamp

ERDA celebrated the Annual Day on 17th December 2011. Lt. Col. V.I. Trivedi (Rtd.), Director, Gujarat Energy Training & Research Institute (GETRI), Vadodara graced the occasion as Chief Guest. The Chief Guest inaugurated the function by lighting the lamp and gave away the merit awards to meritorious children on the occasion This was followed by cultural programme by ERDA employees and

their children. Shri T.P. Govindan, Director, ERDA presided over the function.



A scene of the cultural programme

Important Visitors

Dr. Jenny Williams, Scientific Adviser, 'Which?' UK and Dr. Richard Paris, Head of Research, Right Choice India visited ERDA on 14th and 15th November 2011.

'Which?' Right choice is UK - based consumer organization and aims to help consumer to choose the best domestic home appliances and services.

TRAINING COURSES

The following training courses were successfully conducted during July – December 2011.

271	Evaluation of Solid Insulating Materials Used in Electrical Industry	14-15 July 2011
272	Condition Monitoring of Motors, Generators, Pumps and Turbines	10-11 Aug 2011
273	Calibration of High Voltage Equipments	29 Sept 2011
274	Design Aspects and Performance Evaluation of Motors and Pumps	11-12 Oct 2011
275	Performance Evaluation of Distribution Transformers under Short Circuit and	18 Oct 2011

	Impulse Test Conditions	
276	Condition Monitoring and Health Assessment of Power Transformers	17-18 Nov 2011
277	Design, Evaluation & Compliance of Energy Meters, EMI/ EMC and CE Marking	29-30 Nov 2011
278	Evaluation of Cables and Accessories	8-9 Dec 2011
279	Quality Assurance of Wiring Accessories - Switches, Plugs and Sockets	15-16 Dec 2011

ERDA has so far conducted 279 training programmes and trained 6132 engineers. A token of its appreciation, the 6000th participant was felicitated by presenting a memento during the training conducted on 29th September 2011.

Training Course calendar for the year 2012

No.	Title	Dates
280	Measurement Uncertainties in Testing and Calibration	08 June 2012
281	Evaluation of Solid Insulating Materials Used in Electrical Industry	21-22 June 2012
282	Condition Monitoring of Motors, Generators, Pumps and Turbines	12-13 July 2012
283	Calibration of High Voltage Equipments	27 September 2012
284	Design Aspects and Performance Evaluation of Motors and Pumps	23-24 August 2012
285	Performance Evaluation of Distribution Transformers under Short Circuit and Impulse Test Conditions	25 September 2012
286	Condition Monitoring and Health Assessment of Power Transformers	11-12 October 2012
287	Design, Evaluation & Compliance of Energy Meters, EMI/ EMC and CE Marking	18-19 October 2012
288	Evaluation of Cables and Accessories	29-30 November 2012
289	Quality Assurance of Wiring Accessories - Switches, Plugs and Sockets	06-07 December 2012
290	Safety and Performance Evaluation of Lamps and Luminaire	20-21 December 2012