



Garvita

NEWS BULLETIN

Vol. : 1 • Issue : 2 • September, 2013

From the Desk of General Secretary



We are pleased to bring out second edition of 'Garvita', news bulletin of IREE. The first edition was released by then Chairman, Railway Board Sh. Vinay Mittal under the patron ship of Sh. Kul Bhushan, Member Electrical, Rly. Board on the auspicious occasion of Railway Electrical Engineers' Day on 3rd February, 2013.

This edition highlights the achievement of Electrical Deptt., which has come a long way due to the hard work and commitment to serve the Organization. IREE have taken a number of steps to establish itself as a professional body amongst the established professional Institutions like Institution of Engineers and Institution of Permanent Way etc.

We have tied up with professional bodies like Institution of Engineers India, Institution of Engineering and technology, U.K. to carry out joint activities. In this regard the joint Seminars and joint lectures have been organized time to time. IREE along with IET is organizing one day Seminar in National Rail Museum on Friday, 25th October, 2013 on "Safety in Transportation" in association with Dedicated Freight Corridor Corporation, Airport Authority of India, DMRC & CRRI.

All the Chief Electrical Engineers of Zonal Railways, Production Units, Sr. ED/RDSO, Director/IRIEEN who are also the Chairman of their respective local centres are requested to kindly carry out at least four activities in a year to make IREE a vibrant Organization. Each member is also advised to share experience through blog on IREE weightage.

I request all the members to motivate their Officers & Supervisors to become its member. The membership application can be submitted on the website of IREE having address as www.ireeindia.org and confirmation along with cheque amounting to Rs. 250/- (Associate Member), Rs. 500/- (Member) and Rs. 1000/- (Fellow) in favour of Institution of Railway Electrical Engineers, may be sent to Hony. Treasurer, i.e. Shri R.K. Atoliya (CEE/C/NR/TKJ).

The 3rd Railway Electrical Engineers' Day will fall on 3rd Feb. 2014. It is expected that this day will be celebrated with full zeal across the Indian Railways and each Railway/ Production Unit/RDSO Unit will organise the function to commemorate the same.

It is also requested that all the units may please forward the events being taking place in their units for giving wide publicity and coverage through the News Bulletin.

(Mehtab Singh)

General Secretary, IREE &
Chief Electrical Engineer, Northern Railway

Our New President



Shri Navin Tandon, IRSEE officer of 1976 Batch, joined the service of Indian Railway Service of Electrical Engineers on 03.01.1978. After working on various important assignment over Indian Railways, he has joined as Addl. Member Electrical & President/IREE on 01.04.2013. The IREE looks forward for his support and guidance in the future activities.

Energy Efficiency Management System on Indian Railways

Indian Railway, one of the largest Railways in the world, is an energy intensive organization. A long term energy efficiency management system is being developed. Energy saving technologies and measures are introduced progressively to reduce overall energy consumption and green house gases (GHG) emission in both traction and non-traction system.

A project under UNDP with Global Environment Facility, GEF funding has been initiated to bench mark the current trends of energy consumption on zonal railways, workshops, offices etc., to identify the energy efficient technologies as well as their implementation in traction and non-traction areas. Energy audit of Railway stations, offices, workshops & coaches is one of the key area. The recommendations made during these energy audits would be considered for their effective implementation.

A centre of excellence (COE) is set up at IRIEEN/Nasik which shall cater the requirement of practical training needs on energy efficiency measures of equipments to the trainees.

A web portal www.railsaver.co.in is launched by CRIS which would have all energy data and would disseminate information, reports on energy consumption as well as use of other electrical assets on Indian Railways.

A technology information resource and facilitation desk (TIRFAD) is being established at RDSO to disseminate information on new energy efficiency technologies and measures to Zonal Railways and workshops.

A pilot project of providing 500 Automatic Meter Reading meters is a prime activity on the selected substations of Northern Railway. After its successful demonstration, it shall be implemented on all zonal Railways.

Northern Railway, the project management unit, is monitoring the activities of the project under the joint program with United Nations development Programme (UNDP).

IREE's Path Ahead

- To make the Institution more vibrant and to diversify its activities, Shri R.S. Grover, ex-Addl. Member, Electrical has been appointed as an Executive Director of the institution.
- The Institution plans to introduce Diploma Courses on Electric Traction to spread general awareness and technical insight about Electric Traction and other Railway related Electrical Engineering subjects. The syllabus for the Course has been finalized.
- The course will be initiated at four centres i.e. Delhi, Kolkata, Mumbai and Chennai. IRIEEN/Nasik will provide all necessary assistance in organizing contact classes and the examinations to be held after each semester.
- A Memorial Lecture in the name of Late Shri R.K. Vir, Rtd. General Manager, Chittaranjan Locomotive Works will be organised every year on his Birth Anniversary, 1st Technical Lecture (Called as Shri R.K. Vir Memorial Lecture) will be held on 4th Jan., 2014.

Electrical Department - Contributing more day by day

Energy Management & Green Initiatives in IR

Keeping in line with the IR's "Vision 2020" document which envisages sourcing of at least 10% energy from renewable sources and saving up to 15% by using energy efficient techniques, following development have taken place:

a) *Wind Energy*

On date wind energy technologies have become far more advanced, efficient and environment friendly. Modern wind turbines generate about 200 times over its equivalent of two decades ago. Wind projects, compared to conventional power projects, have shorter gestation periods and the payback is within 6 to 8 years on an average load factor of 25 to 27%.

On date IR have taken major initiatives to install both grid interactive and small rated turbines covering stations & LC gates. Wind energy plants of about 93 MW capacity have been planned in Andhra Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu & West Bengal. Out of this, 25 MW capacity plants are planned in Rajasthan in JV with RITES.

Some of the executed/sanctioned works for wind turbines are:

- i) 10.5 MW (7 plants each of 1.5 MW) plants commissioned in March 2009-10.
- ii) 10 MW plant sanctioned for ECoR in 2009-10.
- iii) 10MW sanctioned for NWR & SR in 2010-11.
- iv) 57.5 MW sanctioned for SR in 2011-12.
- v) 75 MW sanctioned in JV with RITES in 2012-13.

To reap full advantage of Renewable energy, hybrid systems comprising of wind and solar (SPV) systems are being installed for electrification of station and LC gates. RDSO have issued specification for hybrid systems.

b) *Solar Energy:*

With every passing day the cost of energy through solar Photovoltaic type system is coming down. One of the major cost components for this power is the cost of land. Indian Railways is blessed with lot of spare land and additionally huge air space on the platforms and on its workshops. The industry is offering to provide solar power systems on the roof of the platforms/workshops at no cost to Railways with guaranteed 25 yrs Tariff plan which can save crores to IR. The broad estimates bring out that such roofs space has a potential of generation of about 5000 MW of solar PV based power.



Present status:

A target of 3000 MW Grid Solar Power & 1000 MW Off-Grid Solar applications is set during the year 2013-17. Following projects are in progress:

- i) Provision of 1000 LPD solar geyser in rest houses, retiring rooms, running rooms & canteens.
- ii) Provision of 250 nos. Solar lighting system at remote locations over NR.
- iii) Provision of 10 kW solar power panel at stations where power supply is unreliable.
- iv) Setting up of Railway Energy Management Company (REMC) to harness potential of solar and wind energy.
- v) Provision of solar geysers in 24x7 hrs working installation such as running rooms, Hospitals, Canteens etc.
- vi) Provision of solar modules at washing lines to directly charge the battery of the coach.
- vii) Use of bendable solar panels which can be pasted on roof of TL coaches.



c) Policy Directives:

Following policy directives for energy conservation already exists for implementation on Zonal Railways:

- i) Use of sun film on glasses of AC coaches
- ii) Use of copper pipes instead of duct in order to reduce height of coach
- iii) Reversible cycle for heating requirement
- iv) Provision of capacitor bank in AC coaches
- v) Permanent Magnet Alternator reducing weight and energy efficiency.
- vi) De-stocking of incandescent lamps.
- vii) Provision of energy meters on AC & TL coaches for continuous monitoring of energy.

d) Provision of Energy Efficient LED Lights in Coaches

Existing coaches are provided with FL tubes of 18/20W or 2 CFLs each of 11W. Recognizing the potentials of energy saving by providing LED lights N. Rly carried out following experiments:

- i) Replacing existing 18/20W FL tubes with 7W LED lights in a non-AC coach.

- ii) Providing LED lights in a LHB Chair Car of Shatabdi Express replacing existing 18 W FTLs with 9W LED lights.

In both the above cases a retro fitment with LED lights has been done within the existing space using the existing fitting, thus saving on the fitting and modification costs.

e) Development in traction installations:

By the end of March' 2013, 23541 Route Kilometers had been electrified. This constitute of 36.44% IR network, hauling about 65.60% of freight and 50.40% of passenger traffic, at only 38.72% of total fuel cost of Indian Railways for traction purpose is spent. This is giving considerable savings in imported fuel bill.

To introduce electric traction, on newly electrified sections, Sanction of CRS has been obtained for 18 sections over IR. Some of the important sections are as under:

1.	Moradabad - Rosa	NR	169
2.	Suchipind - Chakkibank	NR	107
3.	Chhapra - Barauni	ECR	141
4.	Utratia - Pakhrauli	NR	135
5.	Pakhrauli - Mughalsarai	NR	157

Target for electrification during 2013-14 is 1200 RKM.

f) New Development:

Augmentation of facilities for enhancement capacity of Three phase locos to 50 locos per year :

CLW facilities are being augmented for enhancement of capacity of 3 phase locos to 50 locos per year. In long term perspective, production of 3 phase locos at CLW will increase and production of conventional locos will reduced gradually.

Modernization and augmentation of production capacity from 200 to 275 locos per year :

The demand of electric locomotives is going up continuously. To cope with the increase in freight and passenger traffic modernization and augmentation of production capacity of CLW from 200 to 275 locos per year is being done. Now CLW shall produce locomotives at the rate of 275 per year.

Electric Locomotive Factory at Dankuni, West Bengal

The unit will work as an ancillary unit of CLW. Initially state of art 3-phase high HP locomotive with regenerative breaking of 6000 HP (WAG-9) electric locomotive will be turned out. Subsequently, the infrastructural facilities shall be utilized for the production of 9000 HP locomotives in future.

The Centre of excellence for design, development & evaluation of advanced technology system for electrical rolling stock

The purpose of establishing the Centre of Excellence is to develop capability for designing, development and evaluation of advanced technology systems for Electric Rolling Stock.

The idea is to become a technology exporter from present status of technology importer in Rolling Stock equipments. The main benefit that will accrue from this project is that we shall become self reliant in the field of development of Electric Rolling Stock equipments which will come in a big way not only for the domestic requirement of adoption of new technology in rolling stock but we shall be in a position to cater to the emerging world market as per the customized requirement of different countries.

Electric Loco sheds over Indian Railways

At present 29 Electric Loco Sheds are in operation on Indian Railways for maintenance of Electric locomotives for hauling of goods/coaching train on electric traction. The work of electrification is progressing on fast pace. To cover all routes of electrification, 5 new Electric Loco sheds have been

sanctioned by Railway Board, which are under construction. The details with homing capacity of these sheds are:

S. No.	Railway	Shed Nominated	Homing capacity
1	Northern Railway	Saharanpur	100 locomotives
2	Northern Railway	Mughalsarai	200 locomotives
3	East Central Railway	Barauni	100 locomotives
4	Central Railway	Daund	200 locomotives
5	South East Central Railway	Bilaspur	100 locomotives

Awards

For sensitization of railways employees towards environment, Indian Railways have completed a project for replacement of energy inefficient incandescent lamps with energy efficient Compact Fluorescent Lamps (CFLs) in railway quarters. The project has been awarded Special Jury award at UIC conference in Venice.

Launching of 1st IREE News Bulletin 'Garvita'



1st IREE News Bulletin Garvita was launched on 3rd Feb., 2013 on the auspicious occasion of 2nd Railway Electrical Engineers Day. The news bulletin was released by Shri Vinay Mittal, then Chairman, Railway Board alongwith Shri Kul Bhushan, Member Electrical & Patron IREE. About 200 officers with their spouses participated in the event.



IREE Governing Body

PATRON

Shri Kul Bhushan

Member Electrical, Rly. Board

PRESIDENT

Shri Navin Tandon

Adl. Member Electrical, Rly. Board

GENERAL SECRETARY

Shri Mehtab Singh

Chief Electrical Engineer, Northern Rly.

TREASURER

Shri R.K. Atoliya

CEE (Const.),
Northern Railway

ORGANISING SECRETARY

Shri R.N. Rajpoot

CEE/Planning,
Northern Railway

CHAIRMEN OF LOCAL CENTRES

All Chief Electrical Engineers of Zonal Railways, ICF, RCF, CLW & CORE, Sr. ED TI/RDSO and Director/IRIEEN are the chairman of local centres.

General Secretary, Institution of Railway Electrical Engineers

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