भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
(रेलवे बोर्ड) RAILWAY BOARD

No. 2022/Elect.(TRS)/138/5 **New Delhi, Dated : 17.01.2023**

General Managers,
Central Railway, Mumbai,
East Central Railway, Hajipur
Metro Railway, Kolkata
North Central Railway, Allahabad
North East Frontier Railway, Guwahati
Southern Railway, Chennai
South Eastern Railway, Kolkata
South Western Railway, Hubli
West Central Railway, Jabalpur
CORE, Allahabad
Chittaranjan Locomotive Works, Chittaranjan
Rail Coach Factory, Kapurthala
Rail Wheel Factory, Yehalenka
Director General, RDSO, Lucknow
CAO/Elect., Madhepura, ECR, Hajipur
MD, KRCL & MRVC, Mumbai
CAO, Patiala Locomotive Works, Patiala
CEO, REMCL, Gurugram

Eastern Railway, Kolkata
East Coast Railway, Bhubaneswar
Northern Railway, New Delhi
North Eastern Railway, Gorakhpur
North Western Railway, Jaipur
South Central Railway, Secunderabad
South East Central Railway, Bilaspur
Western Railway, Mumbai

Banaras Locomotive Works, Varanasi
Integral Coach Factory, Perambur
Modern Coach Factory, Rae Bareli

Director, IRIEEN, Nasik Road
CMD, RVNL, New Delhi
CAO, COFMOW, New Delhi

Sub: Record Note of Discussion of Principal Chief Electrical Engineers' Conference held on 3rd January, 2023.

Please find enclosed herewith a copy of Record Note of Discussion of the PCEEs Conference held at Railway Board on 3rd January, 2023 for information and necessary action.

DA: As above

(किशोर वैभव)
कार्यकारी निदेशक विद्युत अभियांत्रिकी (चल स्टॉक)
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रेलवे बोर्ड
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N.O.O.

Copy to : AM(RE), PEDEE(Dev.), ED(EEM), EDEE(G), DME(Tr.) - for information.

Minutes of Principal Chief Electrical Engineers' Conference held on 3rd January 2023 in Railway Board

1.0 Inaugural Session

1.1 Welcome address by PEDEE(RS)

- EDEE(RS)welcomed all participants from Zonal Railways, RDSO, Production units& Railway Board. He complimented all the Electrical Fraternity for making efforts for meeting the stringent loading targets. He further calls for geared up for challenges ahead with respect to 100% electrification, induction of train sets, increasing holding of high horse power electric locomotives and its operation & maintenance etc.

- Expressed concern that reliability of electric locomotives is not up to the mark and serious efforts required to put in for improvement.

- Impressed upon expeditious modification/conversion of existing Diesel loco sheds for homing of electric locomotives and advised Zonal Railways for adequacy of conversion training to Diesel maintenance as well Diesel loco running staff. He advised PCEEs for personally look into training needs.

- Further added that disposal of surplus Diesel locomotives should be expedited as per revised policy norms for condemnation of Diesel locomotives issued from Railway Board.

- Advised all the officers and staff for all out efforts for improvement of utilization of locomotives & crew, Diesel saving and for curtailing the running of Diesel under wire up to maximum possible extent.

1.2 Address by AM(Tr.)

- AM(Tr.) congratulated all the participants for achieving many new mile stones and for various good jobs done during last year.

- Advised all PCEEs to monitor the performance the Diesel locomotives for ensuring effective utilization and expeditious disposal of surplus Diesel locomotives.

- Further expressed that though GTKMs carried by Diesel Traction are progressively decreasing however, reduction in consumption of Diesel fuel is not in same ratio. He advised all PCEEs to look into the GTKMs earned and fuel consumed vis-à-vis fuel issued figures.

- Reliability of 3-Phase electric locomotives is not satisfactory and needs to be improved by analysing equipment wise failures and data shares with RDSO & PUs for revision in respective Reliability Action Plans.

1.3 **Address by AM(RE)**

- AM/RE complemented NCR for enhanced productivity (CUF) of Roof-Top Solar Power Plants significantly on sustained basis with an improvement of 4.8% in CUF% and advised other Railways to monitor the daily generation of solar plants in their respective Railways on the similar lines as done by NCR.

- In view of fulfilment of Budget target, emphasis is to be given by Zonal Railways to install Rooftop solar plants in balance 768 stations by 2023-24 out of commitment of 2000 stations. Further, he added only 39 stations have been completed out of target of 450 stations in current FY 2022-23 with no progress in NCR, NER, NWR, SER, SECR and SWR. He advised the Zonal Railways to expedite the work for fulfilment of Budget Target.

- Railways have been advised to explore the possibility for installation of solar plants on rooftops of Stadiums, Railway Clubs, Institutes, Schools, Community Centres and residential quarters. Further, he advised Railways to explore the possibility of covering rooftops of railway buildings with solar plants to the maximum extent possible.
- A comprehensive policy covering different aspects of energy efficiency in non-traction installations over Indian Railways has been issued. He advised Zonal Railways to chalk out the action plan to achieve the timelines mentioned in the policy.

- Further added that Zonal Railways should identify trains running with Diesel locomotives because of smaller non-electrified section and takeover these trains on electric traction with bridging of Diesel locomotives in non-electrified section.

1.4 **Address by Member(T&RS)**

- M(T&RS) complemented all the participants for banning 09 National Energy Conservation Awards (NECA) in 2022 and executing railway electrification work expeditiously in 2022-23.

- Expressed serious concern over safety front. Due to emphasis be given to safety in all aspects and SPAD incidences should be eliminated.

- Emphasised the necessity of interaction of CLI with running staff as most important for mitigating the human error in train operation.

- Advised Zonal Railways for review their crew beats and closed down the avoidable beat/lobbies for improving the crew utilization.

- Also advised to improve utilization of Coaching crew, Coaching links may be revised to enhance average duty hours.

- Further added that for crew review , latest norms issued from Railway Board may be followed.

- Advised all concerned to expedite the trains taken over on Electric traction commensurate with progress of electrification duly considering the liaison with operating & Mechanical wings in the divisions along with disposal of surplus diesel locomotives.

- Electric Loco reliability in terms of Asset failures logged in ICMS on territorial basis is increased during the current year as compared to previous year. Advised that Electric Loco reliability needs to be improved especially in three phase electric locomotives.

- Expressed his concern over TRD failures which have increased by 63% in comparison to last year and advised Zonal Railways to ensure that proper analysis of the failures is undertaken and action plan made for avoiding them in future.

- In order to generate higher revenues for IR, it is essential that our routes are made fit for moving Double Stack Dwarf Containers (DSDC). The progress of this work is being monitored at the highest leveland, therefore, Zonal Railways should submit the targets for removal of infringements for balance 10 routes out of 17 routes at the earliest.

- Major deteriorating Railways in terms of FRPCM above IR Avg. i.e. ECR (15.4), NR (14.2), NER (13.8), WR (12.8), SECR (12.7), CR (12.3), WCR (11.9) & NCR (11.8) should analyze and take necessary action for improvement in reliability of electric locomotive.

2.0 Launching of Videos on Maintenance and testing of TSS assets by M(T&RS)

- M(T&RS) launched a Videos Series on Maintenance and testing of TSS assets prepared by CAMTECH, Gwalior. He complemented CAMTECH, Gwalior for making this series. The series of Maintenance and Testing of 132/25kV TSS assets covers all the activities which are to be performed during periodical maintenance schedules in animated form which will be easy for users to understand the correct connections and test procedures. This will be very helpful for field units to understand correct Maintenance practices and Testing procedures. These videos are available on www.youtube.com/@camtechgwalior. (Brief write up on the Video Series is attached as **Annexure**)

3.0 Business session - Discussion on Agenda Items:

3.1 Electric Locomotives

3.1.1 Crew utilization & productivity

- Running staff is a vital asset to IR and should be utilized optimally.
- Zonal Railways should review lobby wise operation statistics and rationalize the running staff for ensuring optimal utilization. Avoidable lobbies should be closed down.
- Length of the beat served by loco running staff may be increased to at-least 250 Kms for improving the productivity of crew in terms of KMs/trip.
- To improve utilization of Coaching crew, Coaching links may also be revised to enhance average duty hours& average kms/trip. For such enhancement of duty hours, crew beat of Mail/Express trains may be extended from the present beats.
- With complete electrification of entire BG network by 2023-24, all Diesel running staff needs to be trained on electric traction and therefore Railways should take steps to complete running staff conversion training.
- If there is paucity of training capacity in any Railway, Railway may liaison with other Zonal Railways where training slots are available for expediting the conversion training.

3.1.2 Traction taken over on Electric Traction

- During current FY 2022-23 (up to Dec), total 170 pair of trains have been taken over on electric traction. Zonal Railways should make all out efforts for

taken over of all the possible trains duly considering the revision of existing electric loco links for incorporating additional trains.

- Coaching trains running with Diesel locomotives for longer distance should be given priority for taken over on electric traction over the trains running for shorter distance on diesel locomotives. Trains running more than 750 Kms diesel under wire should be immediately taken on electric traction.

- Electric locomotives with High Rise Pantograph (HRPT) may be diverted to NR & WR for operation in western DFC.

- PUs are advised to provide High Rise Pantographs on passenger locomotives on priority. Excess HRPT, if available with PUs may be diverted to Zonal Railways.

- Freight electric locomotives will be allotted to loading Railways i.e. ECoR, SCR, SER & SECR on priority. Zonal Railways should prepare accordingly.

- Zonal Railways are advised to replace Diesel locomotives in existing Diesel shed with equal number of electric locomotives received for homing in these Diesel sheds and expedite the disposal of Diesel locomotives as per revised policy issued from Railway Board.

- ZRs to assess the requirement of diesel loco with consultation of traffic in se of 100%ca RE of BG route
- ALCO Loco above 15 years age should be phased out at the earliest as per latest Railway Board policy letter **No. 2021/M(L)/466/12Pt,** dated 29.12.2022.
- Trip rationing of Diesel Loco to be monitored closely & higher consuming fuel LPs to be monitored and action to be taken accordingly

3.1.3 **Locomotive reliability**

- Issue of sand box has been deliberated in the meeting and it is observed that the sand gets exhausted very quickly because of capacity constraint of sand boxes in electric locos. CLW and RDSO are advised to study, increase the capacity of sand boxes to 70 kg similar to WDG-6 and issue necessary instructions to zonal railways within one month and Zonal Railways are advised to implement the same at the earliest.

- While going through the failure analysis of three phase locos it is observed that the Transient/Intermittent faults are maximum. Forum is of the opinion that most of them taking place due to software problems. RDSO is advised to take up the issue with OEMs and take necessary action.

- Zonal Railways are facing problem in overhauling of Knorr Brake system because of high overhauling cost by OEM, non-availability of materials and technical knowhow. RDSO is advised to take input from OEM, make overhauling kits for different schedules and arrange to impart training to maintenance staff.

- Performance of material supplied to Indian Railway should be watched critically by RDSO and appropriate actions should be taken against defaulters.

- All the production units expressed their inability to achieve the target advised by Board for current year i.e. 2022-23 due to non-availability of propulsion systems. All the production units are advised to change their attitude and impress upon the manufacturers to fulfill their commitments to achieve the subject targets.Since the source of supply to all PUs is same CLW is advised to call a meeting of all the stakes holder along with other PUs to sort out the issue amicably.

- SCR is advised to divert the supply of pending propulsion systems to CLW, BLW & PLW. The supply of these propulsion systems should be restored back to Zonal Railways as and when supply position improved. Distribution letter may be followed.

- Western Railway, Central Railway, South Eastern Railway & South East Central Railway shall make a dedicated team of officers for 9000 hp Electric Locomotive Manufacturing Project, Dahod and Maintenance facilities to be created at Pune, Kharagpur, Waltair and Raipur.

- The Zonal Railways in Delhi Mumbai and Delhi- Howrah Route should expedite the work of 2X25 kv OHE system for time completion of the project.

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Annexure

Video Series on Maintenance and Testing of 132/25kV Traction Substation assets

- **Introduction**

Indian Railways has taken the work of electrification of railway tracks at a faster pace. With increase in electrification new traction substations will be installed throughout India and as the new assets get added into the railway system so as the maintenance requirement. The correct knowledge and training to the railway and contractual staff for maintenance of substation assets is required. As per Railway board direction CAMTECH, Gwalior with assistance from the United States agency for international development (USAID) has prepared the video series on Maintenance and Testing of 132/25kV traction substation assets. This series will be helpful for all Officers, staff and supervisors in the field for understanding the correct practice of maintenance and testing procedure with the help of animation. These videos are planned in such a manner that these videos can be used as PPT by Trainers for imparting training to trainees.

- **Details of video**

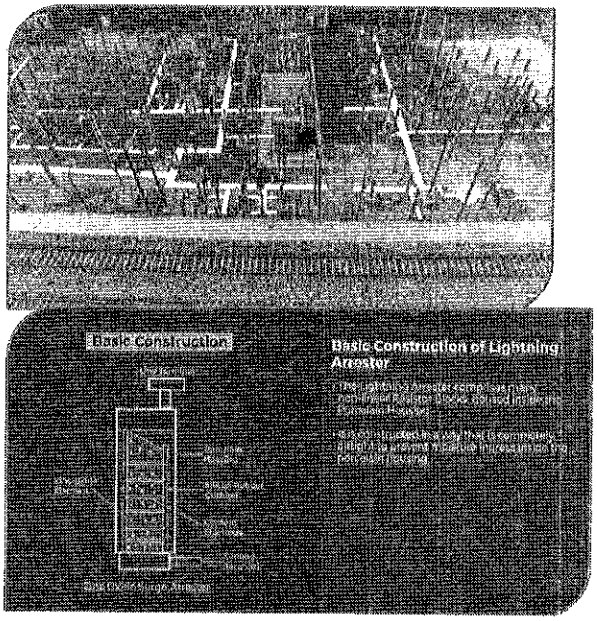
Each Video under the series of Maintenance and Testing of 132/25kV TSS assets covers all the activities which are to be performed during periodical maintenance schedules which include Cleaning, checking and testing. It also guides users about various precautions to be taken before starting work of the assets. Various Tests conducted on assets are shown in animated form which will be easy for users to understand the correct connections and test procedures. Formats for recording data of testing with limit values are also included in the videos.

List of Videos

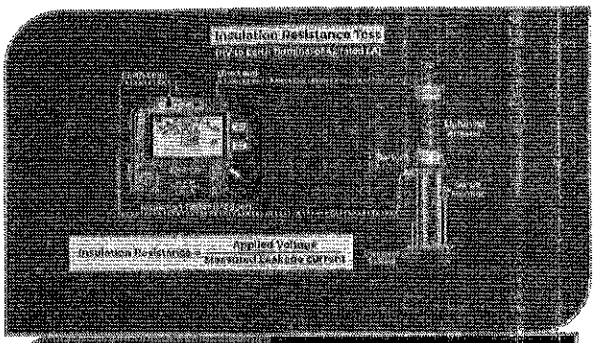
1. Maintenance & Testing of 132/25 kV Traction Transformer in Railway TSS.
2. Maintenance & Testing of 132 kV SF6 Circuit Breaker in Railway TSS.
3. Maintenance & Testing of 25 kV Vacuum Circuit Breaker / Interrupter in Railway TSS.
4. Maintenance & Testing of 132 & 25 kV Current Transformer in Railway TSS.
5. Maintenance & Testing of 132 & 25 kV Potential Transformer in Railway TSS.

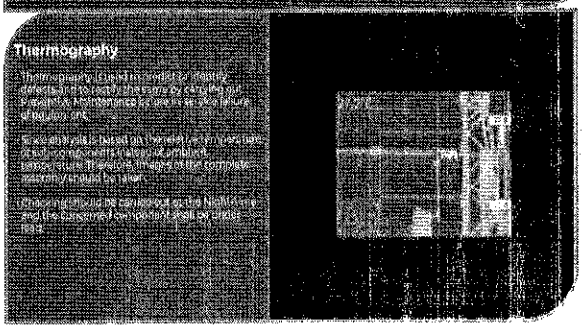
6. Maintenance & Testing of 132 & 25 kV Lightning Arrester in Railway TSS.
7. Maintenance & Testing of Capacitor Bank & Series Reactor in Railway TSS.
8. Maintenance & Testing of 25/.24 kV Auxiliary Transformer in Railway TSS.
9. Maintenance & Testing of 110V Battery set & Charger in Railway TSS.
10. Maintenance & Testing of Control & Relay Panel in Railway TSS.

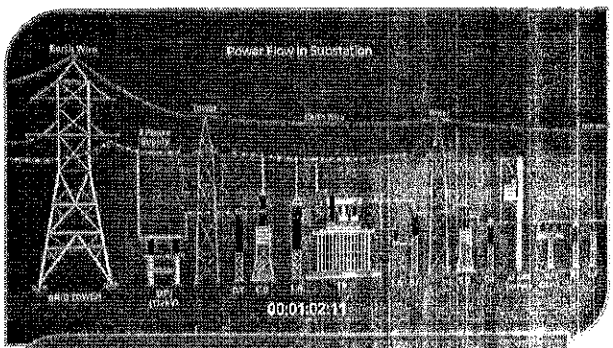
- **Glimpses of Videos**

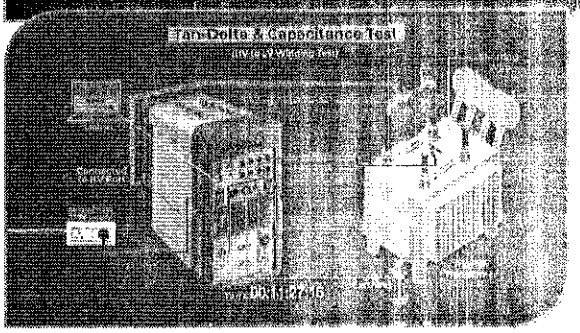












- **CAMTECH Team Involved in Making the Video Series**

1. Himanshu Maheshwari, IRSEE, Joint Director/Electrical/CAMTECH
2. Bal Chandra Agrawal, SSE/ELECTRICAL/CAMTECH
3. Arvind Chaturvedi, SSE/ELECTRICAL/CAMTECH
4. Himanshusingh Rajput, SSE/ELECTRICAL/CAMTECH
5. Sangeeta Shrivastava, JE/CAMTECH