

EASTERN RAILWAY ::: ASANSOL DIVISION
TRACTION DISTRIBUTION DEPARTMENT

GLIMPSES OF THE YEAR 2020-21

A. Mission 160 kmph Project

- OHE modification work for upgradation of OHE to make it fit to operate train at 160 kmph in Delhi-Howrah route under 'Mission 160' Project, has been started in the division. Modification work in Asansol division was inaugurated by PCEE/ER at in September 2020.

Taking advantage of increased availability of power and traffic block due to suspension of passenger train services for Covid-19 pandemic situation, the department has deployed multiple Tower wagons with adequate manpower to achieve maximum progress. Modification of 33 Nos. Tension Lengths (comprising 47.38 TKM) has already been completed departmentally till date.



B. New Electrification

- Electrification of Madhupur-Giridih section (RKM : 26.875, TKM : 34.251 in Asansol division) was successfully completed.

Electric train operation started in this section after receiving of CRS sanction in October 2020. Staff shuttle train was run by electric locomotive on 01.11.2020.



- Electrification of new Railway Siding at Sonapur Bazari Project of ECL including 'Y'-connection from existing Ukhra-Pandabeswar Branch Line (TKM : 14.046) has successfully completed. EIG sanction was received in February 2021.

C. Reliability Improvement Works

- Commissioning of Pandabeswar/TSS : Pandabeswar /TSS has been commissioned on 15.06.2020 and 132 kV power flow was started from 220 kV JK Nagar Sub-Station of M/s. IPCL. OHE feed in Kajoragram/SP-Sainthia/SP section was given from Pandabeswar/TSS after withdrawing extended feed of Waria/FP. Power Purchase Agreement has also been executed with M/s. IPCL with a Contract Demand of 8000 kVA. Under this agreement, M/s. IPCL will supply Traction power at 10% less tariff rate than WBSEDCL, benefitting Railways. Moreover, M/s IPCL will not charge any penalty for excess demand.



- Sanctioned work of 'Replacement of mast at critical implantation Phase-X (PBI No. 606 of 20-21 under PH-36) has physically been completed.

Total 270 nos. Critically implanted OHE structures have been removed on main lines in Khana-Pradhankhunta section through this work.



- Work of 'Replacement of leaning masts & portals', sanctioned in the year 2018-19 (PBI No. 546 of 20-21 under PH-36) has physically been completed. Total 114 nos. Leaning OHE structures have been removed through this work.
- Sanctioned work of 'setting up of earthing station at switching posts (SPs & SSPs) with conventional earthing system' for erection of 82 nos. 13 m long buried rails at SPs SSPs of this division has been physically completed. Total 90 nos. buried rails have been erected through this work.

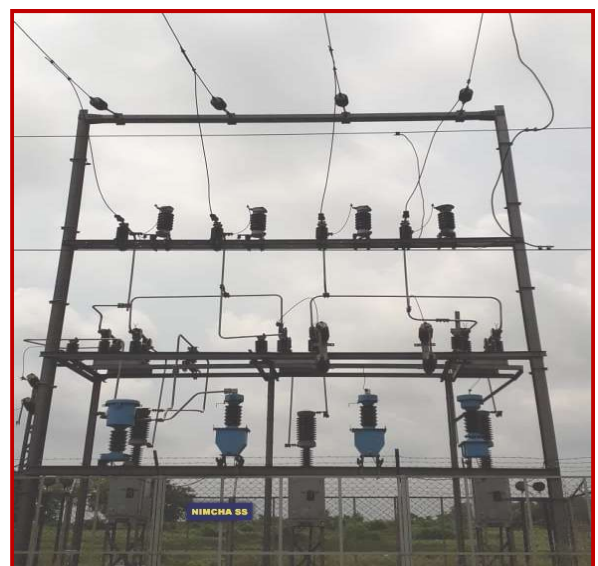
- Modification of Sitarampur/SSP : Installation of new Circuit Breakers and erection of cross feeder wire for feeding Sitarampur/SSP - Chinchuria/SP section in newly electrified Andal - Barabani section including Sitarhas been completed. This will facilitate faster and automatic isolation of Sitarampur/SSP - Chinchuria/SP section from main line section in case of any fault in this section.



- Modification of Kachujor/SSP : Installation of new Circuit Breakers for feeding BKTPP Siding in newly electrified Andal - Sainthia section has been completed. This will facilitate faster and automatic isolation of BKTPP siding from main line section in case of any fault in this siding.
- Modification of Andal/SSP-II : Installation of new Circuit Breakers for feeding Andal-Sonachara section in newly electrified Andal- Barabani section has been completed. This will facilitate faster and automatic isolation of Andal-Sonachara section from main line section in case of any fault in this section.

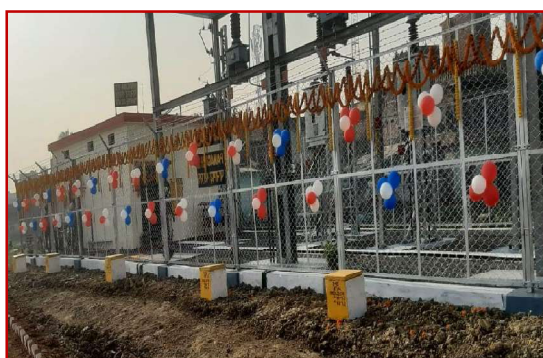
- Nimcha/SS : EIG sanction for newly constructed Switching Post at Nimcha, namely Nimcha/SS has been received. Energisation & commissioning of Nimcha/SS has been done in July 2020.

Nimcha/SS is now feeding 25 kV OHE supply in newly electrified 1st Down Colliery Siding with Down Avoiding Line at Nimcha, through Circuit Breaker to avoid main line trippings in case of OHE failures/ breakdowns in this siding.



- Panagarh/SS : Newly erected Panagarh/SS for feeding new electrified Matix Fertiliser and Emami Cement sidings has been inaugurated by GM/ER during his Annual Inspection of Khana-Asansol in this month. Commissioning of this new SS will facilitate fast isolation of these sidings from Main line, in case of any faults in these sidings.

The most unique feature of this switching post is, it has been provided solar panels, first of its kind in Eastern Railway. Solar panels will be the primary source of LT supply at this post catering to lighting, fan, exhaust fan loads as well as more critical switching panel and battery charging loads, which are usually being fed from Railways' traction supply/local supply. Installation of solar panels at this post will save Railway revenue through saving in energy bill as AT/Local supply will remain at standby.



- Gantry Maintenance : Annual Gantry maintenance at **35 nos.** posts at Sitarampur/SSP, Kalipahari/SP, DSTPS/SS (twice), Kalubathan/SP, Mankar/SP, Andal/SSP-I, Andal/SSP-II, Asansol/SSP, Waria/FP, Ukhra/SSP, Kachujor/SSP, Raniganj/SS, Kalinarayanpur/SS, Galsi/SSP, Topsi/TSS, Siuri/SSP, Kajoragram/SSP, Maheshmunda/SS, Pandasbeswar/FP Jamtara/TSS, Sankarpur/TSS, Lahabon/SP, Jasidih/SSP, Vidyasagar/SSP, Joramow/SP, Madhupur/SSP, Mathurapur/SSP, Simultala/SSP, Chittaranjan/SP, Salanpur/SSP, Kaseetar/SSP, Kachujor/SSP, DPL/SS and Jagadishpur/SS has been done with strict adherence to social distancing norms during this year.



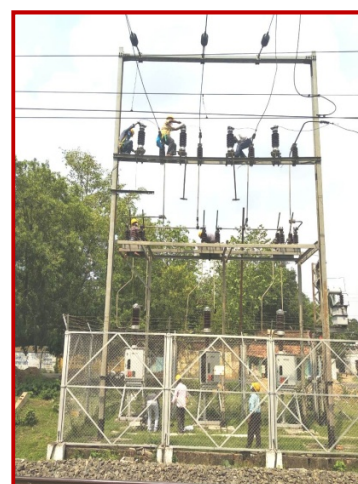
- Total 48 nos. over aged Lightning Arresters have been replaced by new in various Switching Posts of this division during this year. With these, replacement of all over aged Lightning Arresters, which have completed codal life of 15 years, has been completed.



- Total 38 nos. Lightning Arresters have also been provided with *Dis-connector Assemblies* in this year as per RDSO's Maintenance Instruction no. TI/MI/0048.
- Total 948 nos. rusted Cantilever Assemblies have been replaced through various sanctioned works in Khana-Pradhankhunta section during this year.
- Total 05 Nos. old and over-aged & failure prone Aluminium Cross/Along the track feeder have been replaced by Cu feeder during this year.

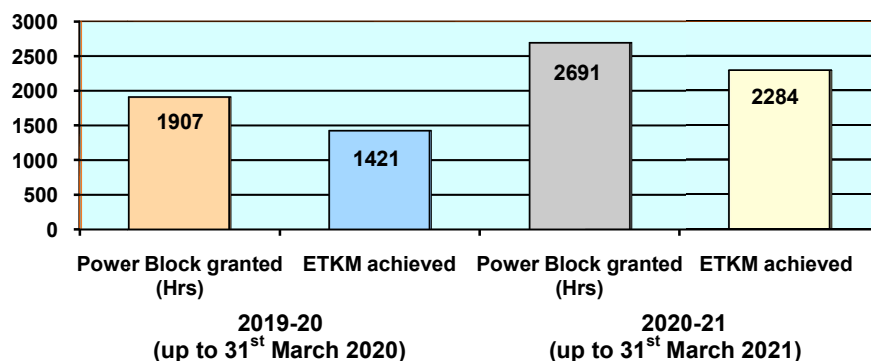
This work was sanctioned in 2018-19 (LBI No. U-106/20-21) for replacement of old and over-aged & failure prone 5600m Aluminum along the track and cross feeders. However, only 600 m could have been replaced in 2019-20 since. Replacement of cross feeders requires all line power and traffic block, taking opportunity of lockdown and suspension of regular train services, balanced quantity has been replaced in just 4 months of this financial year.

With completion of this work, all old failure prone Aluminum Cross feeders have been replaced in the division.



- Total 117 nos. old 5-Pulley Regulating Equipments have been replaced by Modified 3-Pulley Regulating Equipment (with modified pulley groove) in Khana-Pradhankhunta section through sanctioned work during this year. 800 kg balance weight has also been erected at about 92 locations for up gradation of OHE to 160 kmph.

- **All time record 2284 ETKM** has been achieved in scheduled maintenance work in this division in this year, taking advantage of better availability of power and traffic blocks.



D. Safety Related Works

- Total 324 Nos. new Retro-reflective number plates have been erected in Khana - Asansol section during this year as GM Annual inspection preparedness.



E. Improvement of Maintenance Facilities

- Two numbers DMW/Patiala make new DETC type 8-Wheeler Tower wagons have been received in the division.

One of these, was inaugurated by DRM/ASN on the occasion of Independence Day this year. Commissioning of this Tower wagon has also been completed and deployed in OHE maintenance work.



Another of these, was inaugurated by PCEE/ER during his visit of Asansol division in February 2021. DRM/ASN and CEDE/ER were also present on this occasion. Addition of these two tower wagons in the division will facilitate proper maintenance of newly electrified sections as well as execution of safety related special works.



- One BFR mounted 5-Tonne Rail Crane has also been received by Electrical/TRD department of this division and inaugurated by DRM/ASN on the occasion of Independence Day. Addition of this Rail crane will facilitate this department in various electrification works and important safety related works of removal of critically implanted OHE structures & leaning masts.



- Laser Distance Meters, Digital Outside Micrometers and Digital Measuring Tapes (with large LCD display) have been procured and supplied to TRD depots during this year as instructed by DRM/ASN to increase productivity of TRD maintenance gangs.



- Total 08 nos. tree cutting machines have been procured and is being utilised for cutting of trees by TRD depots.

Total 6515 nos. trees were trimmed by TRD depots with strict adherence to social distancing norms in this year, including special pre-monsoon precaution drive to reduce CB trippings. Total 743 nos. vulnerable trees, which may fall on OHE during storm, have also been cut by Engineering and TRD departments during this year.



- Total 328 Nos. new CUG SIM cards were distributed to safety category staff of Electrical/TRD department during this year.

This is facilitating proper implementation of TDMS Foot-patrolling application in the division.

F. Scrap Disposal

- Scrap disposal : details of the scrap disposal in the year 2020-21 are given below :

Description	Total disposed off in 2019-20 (MT)	Target in 2020-21 (MT)	Disposed in 2020-21 up to Jan'21 (MT)
Ferrous scrap	111.722	75	91.232
Non-ferrous scrap	9.097	08	18.817

Despite of lockdown for several months due to Covid-19 Pandemic, target for scrap disposal has been achieved in this year.

- In addition to the above, two nos. condemned Mark-II 4-wheeler Tower Wagons, ER-816 and ER-832 (56 and 45 years old respectively), have been disposed of through Auction Sale on as is where is basis by Belur Stock Yard.



G. Innovations

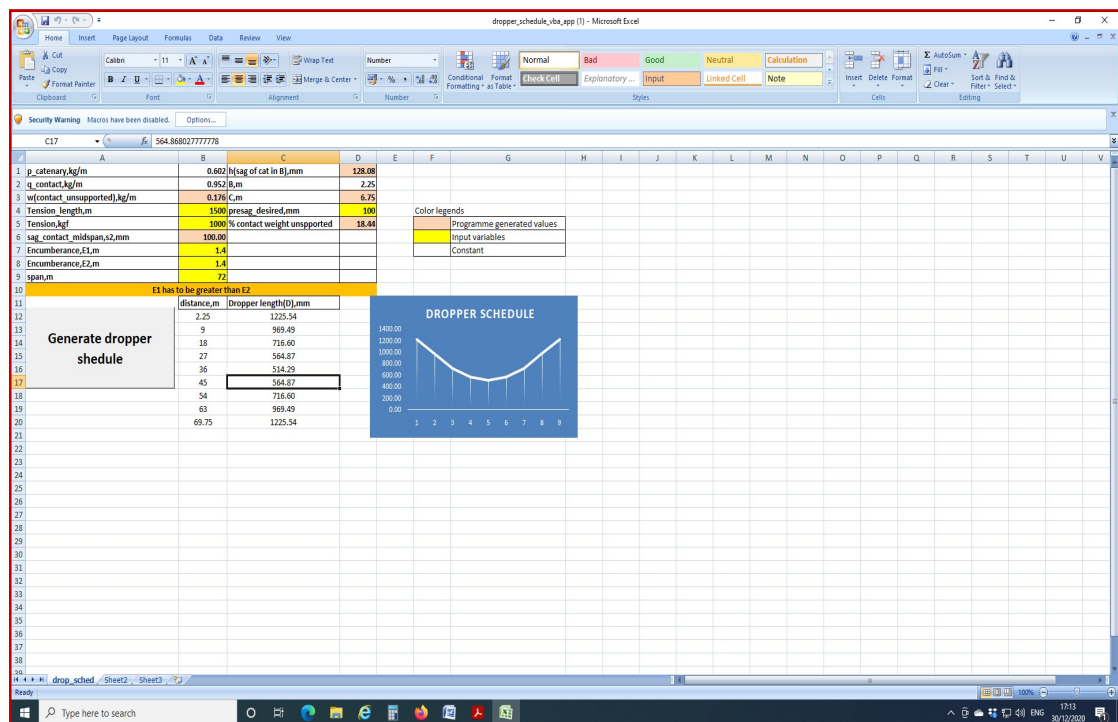
- Surveillance system of Tower wagon has been created by installation of IP based 6 MP CCTV Cameras with 128GB Storage Capacity on roofs of 04 Nos. Tower Wagons of this Division for remote monitoring of OHE maintenance work and breakdown restoration from Mobile / desktop by TRD Officers & Traction Power Control Room, Asansol. These cameras enable live online checking and video recording of OHE condition and profile during movement of tower wagon.



CCTV Camera Installed on Roof of Tower Wagon

- Initially during OHE modification works for for upgradation of OHE to make it fit to operate train at 160 kmph in Delhi-Howrah route under 'Mission 160' Project, division faced problem in following RDSO's dropper schedule report, which is available only for certain combinations of encumbrance & span length, as at the execution site it is not always feasible to get such standard combinations as circulated by RDSO. It has been very difficult to calculate dropper schedule manually at field level due to number of variables viz., encumbrance of both side of span, tension length, presage, span and tension.

To eliminate this problem, **Asansol division has developed a software, which calculates dropper schedule with all the variables** as mentioned above. The design logic is inbuilt in the VBA code and the input variables are taken through an excel sheet. The code is linked with a button which generates the dropper schedule on click and put in the same excel sheet. Accurate dropper schedule is essential for the proper current collection and in turn safe running of trains.



- **Single Point LiDAR based smart OHE Parameter Measurement Device** has been developed in the division for accurately and successfully measuring various OHE parameters and detecting anomalies in OHE parameters largely automatically without the need of any human intervention.

The technology works by measuring distance of a physical point from the LiDAR sensor by measuring the time needed for a light beam to reflect back from the point and reach the optical sensor array present in the LiDAR assembly. The device uses the same technology to map out the 3 dimensional environment of OHE in cross-over/overlap and creates a 3-dimensional representation of the OHE wires by scanning them using LiDAR scanner.



H. Staff Amenities

- PCEE/ER alongwith DRM/ASN inaugurated renovated Electrical/TRD office during his visit of Asansol in February 2021. Electrical/TRD divisional office has been aesthetically furnished by installing new modular furnitures to provide better work environment to staff.



- To address a long pending demand from TRD depots, 10 Nos. Water Cooler with inbuilt purification have been procured and installed at TRD depots and offices to provide potable drinking water to TRD staff.



- Gents' toilet for TPC & RC staff at ground floor of Sr. DEE/TR-D/ASN office was renovated with ceramic tiles, new bathroom fittings etc.



I. Preventive Measures Against Covid -19

- Additional Covid-19 preventive materials like masks, gloves, soap bars, liquid soap and sanitisers have been supplied to all staff and depots in adequate quantities throughout the year.

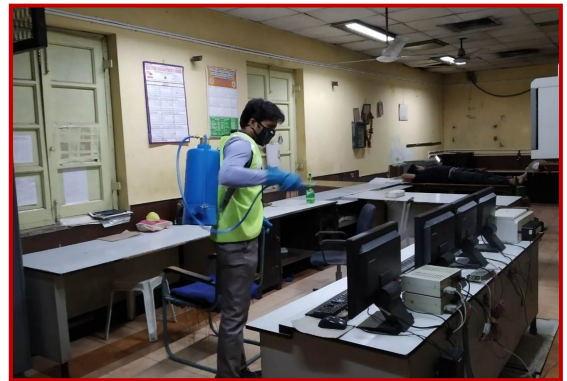


- Thermal scanning of staff has also been done at TRD depots and units with non-contact thermometers on regular basis.



- 'Aarogya Setu' Mobile App has been installed by all TRD staff and their family members as per Railway Board's directive. Staff were counseled for reviewing their status daily on this App before starting for duty.

- Disinfectant spray machines have been procured and supplied to all depots in this month. Spraying of disinfectant is being done in all TRD depots, Traction Power Control and other offices twice a day. Disinfectant is also being sprayed on inside and outside of all Tower Cars twice a day.



J. World Environment Day Celebration and tree plantation

- World Environment Day was celebrated at TRD depots and offices by staff, supervisors and officers of Electrical/TRD department on 5th June 2020. As a part of green initiative Total 476 Nos. saplings were planted at TRD depot premises on this occasion. Special cleanliness drive was also being conducted at depots.

