

DETAILS OF ELECTRICAL DEPARTMENT

CADRE POSITION

Cadre	SS	MOR	Total Vac.	Total Vac %
TRD	350	248	102	29.14
OSM	241	192	49	20.33
TL-AC	219	194	25	11.42
Ministerial	36	14	22	61.11
TOTAL	846	648	198	23.40

Activities of Electrical Department

Electrical department of Solapur Division plays vital role to fulfill the requirement of commuters & Railway employees.

Electrical Department caters following services:

- A. Out station maintenance service
- B. Train lighting & Air conditioning.
- C. Traction distribution maintenance work.
- D. Co-ordination with executing agencies for Railway electrification in
 - 1) RVNL/ RE/ PA for electrification of MO-DUD section,
 - 2) RE/SC for electrification of KWV-LUR section.
 - 3) Construction /Pune for upcoming doubling of KPG-DD section.
- E. Monitoring of electric loco hauled train movement (TRO).
- F. Monitoring work of commissioning of ELS DD Loco shed carried out by IRCON.
- G. Co-ordination with RVNL/SC for general power supply arrangements for construction of Latur Metro coach factory.

Out station maintenance service:

Activities covered are to get supply from various supply authorities & provide various Railway stations, service buildings, Railway quarters, Pump house & maintenance/upkeep of lifts, escalators etc. Entire Solapur Division is being covered for maintenance with 06 depots which are asunder.

1. Ahmednagar, 2. Daund, 3. Kurduwadi, 4. Solapur, 5. Kalburagi, 6. Wadi.

Items	Nos.	Location
22 KV Sub Stations	05	Daund- Power house -1, DD F type -1, DD Hanuman Mandir-1 , DD C&W-1, DD Sonawadi Pump house-1
11 KV Sub Stations	21	WD- 4, GR-2, TJSP-1, SUR-6, KWV-3, LUR-1, PVR-1, ANG-1, PB-1, SNSI-1
Electrical Pumps	351	Major pump house at WD (90 HP)-2, WD (50 HP)-1 WD (30HP)- 3, Daund (200HP)-2, DD (150HP)- 1, Other small pumps-342
D.G. Sets (Major)	31	SUR-6, KWV-1, PVR-1, LUR-2, DD-5, WD-3 SDB-1, KLBG-2, BBD-1, TJSP-1, ANG-3, PB-1, KPG-1, SNSI-2, BAP-1
A.C. Units	420	SUR-217, WD-44, KLBG-16, HG-6, KWV-19, PVR- 6, LUR-27, DD- 44, ANG- 9, PB-10, KPG-1, SNSI-21
Water coolers	105	SUR-22, WD-10, SDB-2, KLBG-7, GUR-2, DUD-1, AKOR-2, HG-1, KWV-10, PVR-4, BTW-1, UMD-1, LUR-5, JEUR-1, BGVN-1, DD-13, ANG-6, RRI-1, BAP-3, PB-1, KPG-4, SNSI-7
Refrigerators	31	31- At Various sites
Transformers	65	WD-11, SDB-02, GR-04, TJSP-02, SUR-15, KWV-11, DD-14, ANG-02, SNSI-02, PB-02
2.1 KVA portable generators	93	At Various sites
High Mast	95	ANG-5, RRI-3, BAP-3, SNSI-2, KPG-3, YL-4, DD-12, BGVN-4, MLM-2, JNTR-1, PRWD-2, WSB-2, PPJ-1, KWV-2, PVR-3, UMD-2, LUR-3, BTW-2, SUR-18, BALE-3, HG-1, KLBG-6, GUR-1, WD-7, TJSP-3
Centralized Air Cooling Units	02	SUR-2
Nos. of Escalators	06	Gulbarga-2, SUR-2, ANG-2
Nos. of Lifts	08	Daund-4, SUR-2, SNSI-2
Stations having T.L. Battery Charging facilities	09	WD-53, SUR-188, KWV-13, DD-140, LUR-30, PVR-31, SNSI-46, ANG-6, KLBG-68 (Total charging points- 575)
Stations having A/C coach pre-cooling arrangements	09	WD-15, SUR-83, KWV-2, DD-26, LUR-8, PVR-10, SNSI-24, ANG-1, KLBG-43 (Total pre-cooling - 212).

SUPPLY POINTS

Items	Nos.
HT Supply (consumer nos.)	18
LT Supply (consumer nos.)	280
Direct Connections	1045

STAND-BY SUPPLY

Items	Nos.	Location
At stations by generator (capacity ranging from 20 to 320 KVA)	31	SUR-6, KWV-1, PVR-1, DD-5, WD-3, SDB-1, KLBG-2, BBD-1, TJSP-1, ANG-3, PB-1, KPG-1, SNSI-2, LUR-2, BAP-1
At PRS's by generators (2.1 KVA)	4	UMD-1, PVR-1, LUR-1, JEUR-1

NON-CONVENTIONAL SOURCES OF ENERGY

Items	Nos.	Details
Solar water heaters	20	WD-5, KLBG-1, SUR-08, LUR-1, DD-4, ANG-01
Solar Emergency Street lights	57	in Railway colonies
Solar Panel/ Solar Pump	02	PK, MO
10 kWp solar grid connecting system	01	SUR Rly Hospital
20 kWp solar grid connecting system	01	Arag Rly Station

REWIRING OF STAFF QUARTERS

Item	Nos.
Total Nos. of Electrified Quarters	: 5297
No. of quarters due for rewiring	: 2987
Quarters rewired in (2020-21)	: 05

TRAIN LIGHTING MAINTENANCE & A.C. COACH MAINTENANCE

Depot Wise Holding:

Sr. No	Depot	SUR	DD	WD	KLBG	Total
1	AC coaches					
1.a	No. of LHB AC coaches	30	-	-	1	31
1.b	No. of SGAC coaches	22	-	-	-	22
1.c	No. of AC coaches Spare	3	-	-	-	3
	Total A	55	0	0	1	56
2	TL coaches					
2.a	No. of TL (SG) coaches in service	117	0	0	12	129
2.b	No. of TL (LHB) coaches in service	84				84
2.c	No. of TL coaches Spare	5	-	-	-	5
	Total B	206	0	0	12	218
3	Other coaches					
3.a	DEMU	30	0	0	0	30
3.b	Power Car	12	0	0	0	12
3.c	Other coaches (BDT+ Saloon)	5	6	6	0	17
	Total C	47	6	6	0	59
4	Grand Total(A+B+C)	308	6	6	13	333

Traction distribution

Main activity of TRD maintenance is covered from 06 nos. of established major TRD depots at YL, BAP, ANG, BWD, DD, KLBG, and 07 nos. under construction SGRE, SGLA, PVR, PRWD, KWV, DUD & BTW along with one Remote Control Centre at SUR which is primarily involved in maintaining of Overhead equipment's, Power Supply Installation equipment's, up keeping of Tower wagons and other infrastructure in good fettle for attending to TRD breakdowns and other emergency & Co-ordination with State Electricity Board for un-interrupted power supply to OHE.

Depot wise TRD assets :

TRD DEPOT	KLBG	DD	BWD	ANG	BAP	YL	SGRE	KWV	PVR	PRWD	DUD	SUR	Total	Remark
TKM	244	104	69	87	81	81	93	165	107	66	75	139	1314	
RKM	78	59	54	68	62	54	81	83	78	47	28	58	751	
Tower Wagon	DETC 200017 (8-wheeler)	DETC 190058 (8-wheeler)	PTL 201008 0079	BEML-927-004 (8-wheeler)	PTL 201008 0075	DETC-222 (8-wheeler)	**	DETC 200057 (8-wheeler)	**	**	**	**	9	02 Nos. tower wagon are spare & 07 additional 07 nos. tower wagons are required for newly created and proposed TRD depots
TSS	MR	DD	BWD	NNB	PDGN	KPG	SGRE #	KWV	Bohali # Wasud #	PRWD	GDGN #	HG	9	TSS work is slow by RE/SC in MRJ-LUR section.
SSP	KLBG HQR SDB WADI	DD-A BRB	SGND VPR RNJD	AKR ANG VL	BAP	PB YL	ARAG KVK JTRD	KEM DHS WDS MKPT	PVR #	JNTR WSB PPJ	DUD KUI GUR	AKOR TLT	30	
SP	**	MLM	KSTH	SRL RRI	CIT	ANK	MRJ DLGN	BLNI WKA	SGLA LAUL	-	-	NGS	13	

- Not commissioned

Under Construction by RE/SC & RVNL/PA

\$ Site location sought by RE/SC.

Electrification

In Solapur division in major sections electrification works are in progress. Details thereof are as under.
BGVN-KLBG section: RVNL has started electrification work of the section in two packages i.e. BGVN-SUR & SUR-KLBG.

Section	RKM	TKM	TSS	SP	SSP	OHE Depot	TW Shed
BGVN-SUR	160	385	3	3	9	3	3
SUR-KLBG	113	261	2	2	5	1	1

Further the section is again divided in parts as per priority.

Section	Agency	RKM	TDC
BGVN-WSB	RVNL	31	Commissioned on 13.11.2020
WSB-KWV	RVNL	48.96	Commissioned on 13.11.2020
KWV-MO	RVNL	47.78	Commissioned on 09.03.2021
MO-SUR	RVNL	32	August- 2021
SUR-DUD	RVNL	63	August- 2021
DUD-SVG	RVNL	37.2	Commissioned on 09.03.2021
SVG- KLBG	RVNL	12.88	Commissioned on 13.11.2020
KLBG-TJSP	RVNL	13	Commissioned on 13.11.2020
HG- DUD	RVNL	51.22	Commissioned on 19.06.2021

MRJ-KWV-LUR Section: -The electrification of MRJ-LUR section is allotted to CORE/SC. CORE/SC has started electrification work of the section.

Section	RKM	TKM	TSS	SP	SSP	OHE Depot	TW Shed
LUR-KWV-MRJ	377	413.8	6	8	14	6	6

Further the section is again divided in parts as per priority.

Section	Agency	RKM	TDC
MRJ-DLGN	CORE	63	Commissioned on 06.01.2020
DLGN-SGLA	CORE	44.9	Commissioned on 09.03.2021
SGLA-PVR	CORE	29.4	Commissioned on 09.03.2021
PVR-KWV	CORE	51	Commissioned on 09.03.2021
KWV-PJR	CORE	56	October- 2021
PJR-OSA	CORE	79	January- 2022
OSA-LTRR	CORE	52	March-2022

TRO

Details of Conversion training (DSL to AC Loco) in Solapur division.

Sr. No.	Depot	S/S	MOR	AC trained crew					Total Trained
				LPM	LPP	LPG	LPS	ALP	
1	Puntamba	111	104	5	2	48	2	46	103
2	Daund	436	358	46	26	106	14	158	350
3	Wadi	184	147	12	7	44	18	65	146
4	Solapur	280	250	54	9	53	12	116	244
5	KWV	160	143	12	15	39	4	67	137
Total	1171	1010	1002	129	59	290	50	452	980

Setting up of New Electric Loco Shed at Daund, Pune.

1	Name of Project	Setting up of New Electric Loco Shed at Daund.
2	Date of Award	07.11.2012
3	Likely Date of Completion	- *
4	Original Contract Value	94.52 Cr.
5	Revised Contract Value	171.81 Cr.
6	Date of Commencement	Mar-2016. IRCON LOA No. IRCON/Civil/5017/NELS.DD/e-Tender/OT/13/52 dated 07.03.2016.
7	Value of work completed till 30/11/2020	68.23 Cr.
8	Balance Value of work	103.58 Cr.

Major Achievements on Electrical Department

1.	<p>i. Newly Electrified section-</p> <p>a) YL-ANK UP line - 15.59 TKM Electrification completed in Sep-2020.</p> <p>b) Total TKM of 187.85 Electrification completed in Nov-2020. (KLBG-SVG (38.84 TKM), KLBG-TJSP (19 TKM), BGVN-WSB (34.5 TKM), WSB-KWV (95.51 TKM)</p> <p>c) Total TKM of 326.47 Electrification completed in Mar-2021. DLGN-KWV (136.15 TKM), KWV-MO (108.04 TKM), DUD-SVG (82.28 TKM) was completed in Mar-2021</p> <p>d) Total Electrification of 529.91 TKM has been completed during 2020-21 against yearly target of 254.5 TKM.</p>
2	<p>Commissioning of TSS</p> <p>a) HG TSS, KWV TSS and PRWD TSS were commissioned in 2020-2021.</p>
2	<p>Improvement in Passenger Amenity-</p> <p>i. The work of Improvement in illumination level at SUR, WADI, KLBG, PVR, LUR, KWV, UMD, ANG, KPG and SNSI station is completed during 2020-21.</p>
3	<p>Energy Efficiency –</p> <p>i. 1.5 ton (28 Nos.) energy efficient AC Units have been provided against old ACs, resulting approximate saving of 440.8 kWh per day; annual saving of Rs. 16,08,920/-</p> <p>ii. 2 ton (12 Nos.) energy efficient AC units have been provided against old ACs, resulting approximate saving of 78.3 kWh per day; annual saving of Rs. 2,85,795/-</p> <p>iii. Replacement of 405 Nos. old ceiling fans with energy efficient fans, resulting approximate saving of 182.25 kWh per day; annual saving of Rs. 6,65,212/-</p> <p>iv. Over-aged assets including DG sets (30 Nos.), UPS (97 Nos.), water coolers (69 Nos.) and ACs (90 Nos.) have been replaced this year over 78 stations in the division.</p> <p>v. Provision of Energy efficient water pumps: Total 88 Nos. Energy efficient pumps have been provided in the division.</p>
4	<p>Net Zero Energy Station: Rooftop On-Grid Solar System at ARAG Station</p> <p>The rooftop of ARAG station's building is installed with 60 Nos. solar panels (48 panels provided by Railway & 12 Nos. panels provided by outside agency) to produce 20 kW power. ARAG station premises now run on clean and green energy. The solar energy harnessed from the solar panels of approx. 29,200 kWh yearly, helps to save energy bills of Rs.1,95,056 yearly.</p>
5	<p>Energy Conservation Measures –</p> <p>The electricity consumption in units (kWh) was reduced by nearly 11.07 % and energy bills (in Rs.) was reduced by nearly 15.28% in year 2020-21 as compared year 2019-20.</p> <p>a) 14 Nos. LT consumer tariff changed from LT-II-Commercial to LT-VII B- Public services for optimization of energy bill, which resulted monthly saving in energy bills of Rs. 32,086 per month.</p> <p>b) The Electricity connection of 14 Nos. closed LC gates has been made PD (Permanent Disconnection), which resulted monthly saving in energy bills of Rs. 5697/-</p>
6	<p>Improvement in Electrical infrastructure facilities –</p> <p>i. New 8 wheeler tower wagon DETC-200017 has been commissioned for SGRE OHE depot.</p> <p>ii. Construction of New tower wagon shed has been completed at KLBG TRD depot.</p> <p>iii. Height of contact wire (OHE) under ROB between BAP- PDGN has been increased to 5.15 m from 5.0 m to facilitate passage of DSDC.</p> <p>iv. OHE sectioning between YL-ANK has been improved by erection of isolators on DN and UP line at (YL end) ANK station. This addition of isolator on main line facilitated the availability AC power supply at all lines at ANK station, thus making more power block margin between YL-ANK and also improved operation facility of AC traction.</p> <p>v. Additional 30 HP pump has been provided at Kunoor pump house, WADI to improve reliability of water supply.</p> <p>vi. 02 Nos. Solar trees have been provided at Railway hospital & RPF barrack in Feb-2021.</p> <p>vii. 14 Nos. staff quarters rewired and 13 Nos. gang huts were electrified in year 2020-21.</p> <p>viii. Lightning arrangement at loop lines of 20 stations has been completed.</p> <p>ix. Power supply arrangement done for pre-cooling & other facilities at new pit line, Solapur.</p>

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| | <p>x. Newly developed 8 Nos. quarantine isolation centres have been provided with electrical assets (LED Lights-56 Nos., fans – 20 Nos., Exhaust fans-10 Nos., and electric geyser-15 Nos.).</p> <p>xi. Total 4442 meter overhead cable has been converted into UG cable in the division.</p> <p>xii. HOG testing kit has been developed at coaching depot Solapur to test HOG compliant power cars.</p> <p>xiii. Testing kit has been developed at Solapur coaching depot to check continuity of UIC coupler. Continuity and working of UIC coupler is ensured at primary depot.</p> <p>xiv. Total 9 rakes for covid-19 were placed in Solapur division with 188 coaches at various locations on Solapur division; it's charging and regular maintenance.</p> <p>xv. For achieving environmental & financial benefits of HOG technology, Solapur Division has upgraded all power cars to become HOG compliant. Primary rakes of Solapur Division now operate 06 trains with HOG which has helped to save 1,10,911 liters of HSD oil in 2020 -21, resulting in savings approximately ₹ 0.85 Crore.</p> <p>xvi. LED conversion is completed in 56 AC coaches & 278 non-AC coaches at Solapur thereby achieving 100% LED based illumination in coaches.</p> <p>xvii. In Eight power cars of Solapur division additional switches have been provided to control Luggage lights from VHF / Charging box in Guard's compartment of LHB type power cars as per modification sheet no. – RDSO / PE / MS / AC / 0081 – 2020 (REV – 0)</p> <p>xviii. Rain water arrester and harting connector has been provided in 43 Nos. LHB coaches of Solapur coaching depot.</p> <p>xix. Provision of Energy efficient lights in pit line at SUR, DD and KLBG: 110 V DC LED provided in pit lines. (100 % work completed).</p> |
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Photograph of Highlights

New 8 wheeler tower wagon has been commissioned at KLBG OHE depot.



Work of new tower wagon shed has been completed.



Improvement in illumination at ANG station (PF No.1)



Development of HOG complaint Power Car Testing Kit:

The kit has been developed to test the working of HOG complaint power car at primary depot.



Commissioning of Parewadi TSS



Electrification of SVG -KLBG- TJSP section.

