Welcome to TRD Ajmer

Brief Introduction of the TRD Department:-

TRD department is known as the Traction and distribution department of the Indian Railway. TRD department is responsible for the management of the 25 Kv Power supply and for maintenance & operation of Overhead equipment's, Power Supply installations, Sectioning post & Remote control to. supply necessary electric power to Electric Locomotive / MEMU.

Power Supply

25 kV, ac, 50 Hz single-phase power supply for electric traction is derived from the grid system of State Electricity Boards through traction sub-stations located along the route of the electrified sections at distances of 35 to 50 km apart.
The distance between adjacent sub-stations may however be even less depending on intensity of traffic and load of trains.

Sectioning of OHE.

In Ajmer Division Power Supply Traction sub-Station are Mavali TSS , Ghosunda TSS , Sareri TSS , Nasirabad TSS , Makrera TSS , Bar TSS , Marwar TSS , Khimel TSS , Pidwara TSS and Shriamirgarh TSS.

To ensure rapid isolation of faults on the OHE and to facilitate maintenance work the OHE is sectioned at intervals of 10 to 15 km along the route.
At each such point a 'switching station interruptors' usually rated at 600A are provided.
The shortest section of the OHE which can be isolated by opening interruptors alone is called a 'sub-sector'.
Each sub-sector is further sub-divided into smaller 'elementary sections' by provision of off-load type manually operated isolator switches.
At some stations with large yards, alternative feeding arrangements are provided so that the power for feeding and yards may be drawn from alternative routes. Normally the switch is locked in one position, being changed to the other when required after taking necessary precautions.
To meet requirements at electric loco running sheds, isolator with an earthing device in the 'off position is provided.
At watering stations manually operated interrupters and isolator with earthing heels are provided to enable switching off of the power supply locally and earthing the OHE to enable working on roofs of rolling-stock.

Types of switching stations

Feeding Post (FP): It is a supply control post, where the incoming feeder link from grid substation are terminated. Each feeder supplies the OHE on one side of the feeding post through interrupters controlling supply to the individual lines. Thus, for a two track line, there will be four interrupters at each feeding post.

Sectioning and Paralleling Post (SP) : These posts are situated approximately midway between feeding posts marking the demarcating point of two zones fed from different phases a ‘paralleling interrupter’ is provided at each 'SP' to parallel the OHE of the up and down tracks of a double track section, 'bridging interrupters' are also provided to permit one feeding post to feed

beyond the sectioning post upto the next FP if its 25 kV supply is interrupted for some reasons. These bridging interrupters are normally kept open and should only be closed after taking special precautions as detailed in these rules.
Sub-Sectioning and Paralleling Post (SSP): One or more SSPs are provided between each FP and adjacent SP depending upon the distance between them. In a double track section, normally three interrupters are provided at each SSP i.e. two connecting the adjacent sub-sectors of up and down tracks.
Sub-Sectioning and Paralleling Post (SSP) : These are provided only occasionally. They are similar to SSPs with provision for sectioning of the OHE but not paralleling.

Neutral Section : It is a short section of insulated and dead overhead equipment which separates the area fed by adjacent substation or feeding post.
A neutral section is provided to make it impossible for the pantograph of an electric locomotive or EMU train to bridge the different phases of 25 kV supply, while passing from the zone fed from one sub-station to the next one.
Since the neutral section remains 'dead', warning boards are provided in advance to warn and remind the Loco pilot of an approaching electric locomotive/EMU to open locomotive circuit breaker (DJ) before approaching the 'neutral section', to coast through it and then switch 'on' on the other side.
Special care is taken in fixing the location of neutral sections, on level tangent tracks far away from signals, level crossing gates etc. to ensure that the train coasts through the neutral section at a sufficiently high speed, to obviate the possibility of its stopping and getting stuck within the neutral section.

Other Important Equipment at Switching Stations

Lightning arresters are provided to protect every sub-sector against voltage surges.
Auxiliary transformers are provided at all the posts and also at certain intermediate points to supply ac at 240 V, 50 Hz required for signalling and operationally essential lighting installations. To ensure a fairly steady voltage, automatic voltage regulators are also provided where required.
Potential transformers are provided at the various switching stations for monitoring supply to each sub-sector.
A small masonry cubicle is provided to accommodate remote control equipment, control panel, telephone and batteries and battery chargers required for the control of interrupters and other similar types of equipment.

- **Breakdown Management:-**

To attend the breakdown 10 Nos Tower wagons are Available with Ajmer Division at various OHE Depots.

- **Mission/Vision:-**

·100 % Electrification of Ajmer division.

The balance section Targeted for CRS inspection in with TDC :

SN	Section	RKM	Executing agency	Present status
1	MVJ - BI	82	RITES	Sept’22
2	UDZ – KRCD	25	RITES	Sept'22
3	DNRP-HMT	96	RITES	Jan'23
Total		**203**		

·No train punctuality on TRD account.

·Minimize OHE maintenance cost by manpower planning