



SOUTHERN RAILWAY

Headquarters Office,
Personnel Branch,
Chennai – 600 003
Dated 23.01.2023.

P(S)608/IV/DTTC/GOC/Chief Instructor/DE

**DRM/P/MAS, TPJ, MDU, SA, PGT & TVC
WPO/GOC, Principal DTTC/GOC**

Sub: Selection for the post of Chief Instructor/ Diesel
Electrical (Ex-cadre) in Pay Matrix Level-7 at DTTC/GOC

It is proposed to conduct selection for filling up of the “**ONE**” vacancy of **Chief Instructor/ Diesel Electrical (Ex-cadre) in Pay Matrix Level-7[Grade Pay Rs.4600]** by at Diesel Traction Training Centre/GOC. by calling volunteers from Pay Matrix Level – 7 [Grade Pay Rs.4600] and Pay Matrix Level – 6 [Grade Pay Rs.4200] of **7th CPC Pay Matrix**.

ELIGIBILITY CRITERIA

Educational Qualification	B.E./B.Tech/AMIE/ Diploma in Mechanical/ Electrical & Electronics Engineering Graduates will be given preference.
Eligible staff from Mechanical Department to be called for	1. SSE/Diesel/Electrical in Pay Matrix Level - 7 (GP Rs.4600) 2. JE/Diesel/Electrical in Pay Matrix Level - 6 (GP Rs.4200) 3. Loco Pilots (Mail/Express/Pass/Goods) except Shunters & Diesel Assistant Pay Matrix Level - 6 (GP Rs.4200)
Experience	1. 5 years of experience in Diesel Shed / Shops 2. Stream and Diesel (Electrical) background and 3 years of experience as Loco Pilot
Age Limit	55 years on the date of notification
Tenure	5 Years
Other conditions	Employees already working in another Ex-cadre post need not apply or Employees who have not completed the mandatory cooling off period after repatriation from an Ex-cadre post as advised in PBC No.169/2001 & 72/2005 need not apply

2.0 SELECTION PROCEDURE

- i) The selection comprises of Written Examination with 100% objective type questions and negative marking as per the instructions in PBC No.264/2019. The written examination will be followed with a Class Room Trial in respect of qualified candidates in the Written Examination.
- ii) In terms of PBC No.263/2018 and 46/2019, the Written Examination shall comprise of 100% Objective Type multiple choice questions
- iii) In terms of PBC 264/2019 there shall be negative marking @ 1/3rd mark reduced for every wrong answer.
- iv) Selection will be based on merit as per the instructions contained in RBE No.4/2020 read with RBE No.39/2020.
- v) In the terms of Railway Boards letter No. Hindi/87/OL/1/10/3 dated 03/11/1988 there will be questions in Official Language policy & rules for at least 10% of the total marks prescribed which will be optional.

3.0 GENERAL INSTRUCTIONS :

- i) Applications should be submitted through online mode only from 03.02.2023 to 17.02.2023 <https://notifications.srhqpb.in> duly adhering to the procedures and instructions envisaged in PBC No.150/2022 dated 30.08.2022.
- (a) **Application opening date** - **03.02.2023**
- (b) **Application closing date** - **17.02.2023**
- ii) The link for the web portal will be made available from **03.02.2023** in the Personnel Department internet notification <https://notifications.srhqpb.in> and also, in the Railnet website of Southern Railway.
- iii) The employees willing to apply for the above selection have to submit their applications through the above mentioned website in online mode only. **Applications received from any other mode will be summarily rejected.**
- iv) The employees should upload the requisite documents in the above mentioned **website in PDF format as a single file only**
- v) After submission of the application by the employee, Cadre Personnel Officer will download the application and certify the correctness of the application and upload it for further processing at HQ.
- vi) The '**Syllabus**' for the selection is annexed herewith for information to the applicants.
- vii) If there are no volunteers for the proposed selection of Chief Instructor/ Diesel Electrical , then the Cadre Controlling Officer / Personnel Officer concerned shall send a '**NIL**' report on or before **03.03.2023 through e. office certainly** to avoid delay in processing of the selections.
- viii) Wide publicity may be given to this letter, duly exhibiting in the office notice boards for information of all staff concerned.

SOORATHI
KOTEESWARIAH
INDUSEKAR

(S.K.Indusekar)

Asst. Personnel Officer/M&E

for Principal Chief Personnel Officer.

Copy to: PCME,CELE. CME/D(D&M) for kind information
CWM/GOC , Secy to PCME,
Sr.DME/DME/DSL/MAS,TPJ,MDU, SA & TVC.
Sr.DEED/DEE/OP/MAS,TPJ,MDU,TVC,PGT & SA

Digitally signed by SOORATHI KOTEESWARIAH
INDUSEKAR
DN: c=IN, o=Personal,
pseudonym=53f8de3f4401026af936f96d3535685e0c0
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st=TAMIL NADU,
serialNumber=b7b59d5a45f8d4ff4c20de556de81b9f3
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KOTEESWARIAH INDUSEKAR
Date: 2023.01.23 15:55:10 +05'30'

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**SYLLABUS FOR THE SELECTION FOR THE POST OF CHIEF INSTRUCTOR
DIESEL/ ELECTRICAL (EX-CADRE) IN PAY BAND Rs.9300-34800 +
GP. Rs.4600/- AT DTTC/GOC.**

1. Traction Systems:
 - Steam Engine
 - Theory of IC Engines
 - Mechanical traction
 - Hydraulic transmission
 - Diesel electric traction
 - Electric transmission
 - Merits and de-merits involved in each type and through appreciation of relative costs of various modes of traction.
2. Generation of various types of diesel locomotives and suitability for adoption to different types of services on Indian Railways and relative cost.
3. Benefits and relative merits between Diesel traction and Electrical traction
4. Basic knowledge regarding the Power pack and working principle of diesel engine and familiarization alongwith other supporting systems.
5. Detailed knowledge of AC/DC Traction machine such as Traction Generator, Traction Alternator, Traction Motors, Auxiliaries, Small motors, etc.
 - Desirable characteristics
 - Constructional features
 - Control systems
 - Overhauling procedure
 - Roller suspension bearing tube assembly maintenance
 - Roller/ball bearing inspection and care to be taken while handling
 - Running repairs and heavy repairs including rewinding
 - Design improvements to enhance the operational reliability
 - Various classes of insulation and the insulating materials used for traction machines.
 - Various stages of testing a repaired machine and testing of overhauled machines.
6. Detailed knowledge of the electrical controls systems adopted in BG/MG Diesel Electric and Diesel Hydraulic locomotives.
 - E type excitation system
 - Propulsion control system
 - Microprocessor controlled excitation system
 - Power and Control circuits
 - Dynamic Braking circuit
 - Lighting circuit
 - Safety circuit



- Voltage regulator controls panel
 - Engine control panel
 - Transition panel
 - Excitation control panel
 - Electro hydraulic governor and Microprocessor control governor
 - Trouble shooting, Rectification, Testing and setting values in control panels
 - DC-DC converted and AC-AC inverters.
7. Overhauling and testing procedure of Control gear equipment of all type of diesel locos.
- Pneumatic contactors
 - Electromagnetic conactors
 - BKT/REV
 - Control stand
 - All types of Relays
 - Solenoid valves
 - Circuit breakers
 - Load ammeter and Battery ammeter
 - Calibration of sensors, temperature switches, pneumatic switches, etc.
8. Lead acid batteries:
- Commissioning of new set of batteries
 - Good maintenance practices recommended
 - Reasoning of common defects noticed
 - Methods adopted to recondition common defects
 - Superiority of Low maintenance batteries
9. Preventive maintenance schedules:
- Scheduling pattern of Diesel locomotives
 - Maintenance practices in various schedules
 - Trouble shooting techniques and sequence of operation
 - Modifications suggested for implementing extended schedules.
10. Load testing
- Arrangements required for conducting load box
 - Sequence of operation after major/schedule before load box
 - Preparation of cabling and other connection to locomotive for load testing
 - Testing and adjustments of various technical parameters of both electrical and mechanical in accordance to the designed HP and recorded.

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11. Power Installations:

- Knowledge of Indian Electricity act and rules
- Precautions and periodical maintenance given to power installations and substation
- Procedure followed while undertaking the breakdown work
- Precautions to be taken for safe working of electrical equipments
- Electrical accidents and procedure for reporting as per electricity act and regulation
- Periodical maintenance practices and recording the earth values
- Estimation of power requirements for different equipments provided in the shed
- Designing power system layout for shed.

12. Familiarity with various testing instruments

- Shock pulse meter – for checking bearing condition
- Surge tester for checking armature winding
- Tan delta meter – for checking the healthiness of insulation
- Dynamic balancing after reconditioning of armature
- Hi-pot test for checking the armature condition
- Handling of Micro Ohm meter, Capacitance meter, Avometer/Multi-meter and digital instruments.

13. Evolution of Modern diesel locomotives from old age diesel locos, Awareness of various developments taken place on various components systems, such as,

- Alternator locos
- AC 3 phase induction motors for traction motors
- AC motors
- Power rectifiers
- Diagnostic display panel and data logging
- Self load testing
- Microprocessor control excitation system
- Event recording system
- Microprocessor control governor
- Microprocessor speedometer
- IGBT voltage regulators
- Light weight traction motor with roller suspension bearing
- Low maintenance batteries
- Anti-collision device
- Auto flasher working
- Passenger alarm terminal board

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| | | 20. | Know
be cc |
| ➤ Vigilance control device | | | |
| ➤ Water level indicators | | 21. | <u>Know</u> |
| ➤ Bio fuelled locomotives | | | ➤ |
| ➤ Enhanced axle caps for traction motor | | | ➤ |
| ➤ Twin beam head lights | | | ➤ |
| ➤ Air dryers | | 22. | <u>Know</u> |
| ➤ Ergonomically built-in Crew friendly cab | | | |
| ➤ Inverter built AC motors | | | |
| ➤ Air conditioning cab | | | |
| ➤ Various types of sensors for voltage, current, pressure, temperature sensing etc. | | | |
| 14. Familiarity with New age diesel locomotives, such as, WDP 3A, WDM 3A, WDM 3D, WDG 3A, WDP 4, WDG 4, etc. | | 23. | <u>Skill</u> |
| ➤ Maintenance aspects of these locomotives | | | |
| 15. <u>Safety – Awareness on</u> | | | |
| ➤ Personal safety | | | |
| ➤ Equipment safety | | | |
| ➤ Premises safety | | | |
| 16. <u>Shed/Shop Layout</u> | | | |
| ➤ General principles of layouts of Sheds/Shops, according to quantum of work, | | | |
| ➤ Processing of repair procedures and line of working | | | |
| ➤ Requirements of layouts for Modern sheds/shops | | | |
| 17. <u>Lubricants</u> | | 24. | <u>Re</u> |
| ➤ Properties of lubricants | | | |
| ➤ Types of lubricants used on diesel locomotives | | | |
| ➤ Testing methods of lubricants | | | |
| ➤ Acceptable levels of various lubricants used. | | | |
| 18. <u>Failure analysis</u> | | | |
| ➤ Classification of failures by Railway Board | | | |
| ➤ Analysing system wise failures and remedial actions suggested | | | |
| ➤ Familiarity with failure analyzing techniques, such as Pareto analysis, Cause & Effect diagram, Bar charts, Pie charts, etc. | | | |
| 19. Familiarity of RDSO/BHEL instructions suggesting modifications and maintenance practices issued from time to time to be adopted on electric equipments. | | 25. | <u>O</u> |

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20. Knowledge of draftsmanship, understanding of material specification and tests to be conducted while accepting materials received from stores.

21. Knowledge of Establishment rules

- Salient features of Hours of employment regulations
- Important provisions in the Workman's Compensation Act
- Payment of Wages Act

22. Knowledge of Stores

- Stores procedure regarding indenting stock/non stock procurement
- Various types of tendering
- Bulk indenting procurement annually through DLW/DMW

23. Skills preferred

- Knowledge in Microprocessors, solid state electronics, semiconductor devices, etc.
- Excellent communication skills
- Excellent leadership with high repute and ability to train a large group
- Familiarity in vernacular languages of South India
- Hands on experience in MS Office tools
- Formulating new training strategies and approaches like demo programs for explaining concepts
- Making of presentations on MS Power Point
- Adept at handling overseas Railway trainees
- Delivering extempore lectures
- Competency in writing technical articles

24. Responsibility

- Determining of appropriate training programme, understanding the requirements of organization, for individual employees working in various categories and cadres of home and foreign railway.
- Developing of training contents and programs and execute the same round the year
- Travelling extensively to impart training at various sheds, trouble shooting points, crew booking offices, etc.
- Presentation of Quarterly reports on training schedules and correlating of his performance with ground reality.

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