



## SOUTH CENTRAL RAILWAY

Office of the General Manager  
Vigilance Branch  
Rail Nilayam  
Secunderabad  
Dt: 01.09.2021

No.G.180/CON/VIs/Elec./Vol.XIII

PCEE/SC, PCPO/SC, Dy.CEE/SC & LGDS  
Sr.DPOs/SC, HYB, BZA, GTL, NED & GNT,  
SPO/RE, Principal/ESTC/LGD.

Sub: - Filling up of 01 ex-cadre post of Chief Vigilance Inspector/Electrical  
in Level- 7 of 7<sup>th</sup> CPC

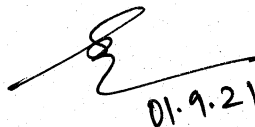
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It is proposed to conduct a selection by calling volunteers from Electrical Departments, fulfilling the following conditions to fill up **ONE** ex-cadre post of Chief Vigilance Inspector Electrical Discipline in Level - 7 of 7<sup>th</sup> CPC. Therefore, it is requested to give wide publicity amongst the eligible candidates and forward the applications received in the proforma enclosed, duly certified the relevant information.

### Terms and Conditions for Eligibility :

1. Volunteers should be working in Pay Matrix Level-7 of 7<sup>th</sup> CPC on regular measure (not under MACP) of Electrical departments.
2. Staff working in Pay matrix Level-6 of 7<sup>th</sup> CPC on regular measure with minimum of 02 years service in the grade may be considered in case no volunteers from Pay Matrix Level-7 are found.
3. In any case the volunteers should have put in minimum five years services in Railways as on the date of notification.
4. They should have minimum 05 years leftover service at the time of applying to the post.
5. They should be free from DAR/SPE/Vigilance cases and should not have been taken up under DAR as a result of SPE/Vigilance cases during their entire period of service. They should have good record of service with proven integrity.
6. They should not have served as Vigilance Inspector in the past.
7. They should have flair for vigilance work i.e. in vigilance investigations and other associated works.
8. Nature of work requires extensive travelling. Therefore, volunteers should be willing to work under such condition.
9. They should be working in a cadre post but NOT in the ex-cadre post.
10. The posting of CVI is on tenure basis for a period of 04 (four) years. However, if the performance of the employee posted as CVI is found unsatisfactory, he/she will be repatriated to the parent department at any time before completion of tenure without assigning any reasons thereof.

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01.9.21

**MODE OF SELECTION:**

A written test will be conducted for the eligible employees for 50 marks with duration of Three hours. No supplementary written test will be conducted since the selection is by calling volunteers.

The candidates/employees who secure minimum 60% of marks in the written examination will be called for next level of examination i.e for Vigilance Aptitude Computer Knowledge test of 30 marks.

Thereafter, considering APARs of last 3 years (Max – 15 marks) and for academic qualifications (Max – 5 marks) put together with the above written examination marks the final empanelment will be done purely based on merit since it's a selection among the candidates who secure minimum 60% marks in aggregate subject to having qualified in the written examination with minimum 60% of marks.

Applications in the proforma enclosed should be complete in all respects duly signed by respective branch officers. After due verification personnel branch officers should certify the contents clearly with respect to APARs grading, Integrity, and Details of Punishments undergoing/contemplated.

All applications along with it enclosures should be sent to this office **only through e-office** to Senior Vigilance Officer/Personnel so as to reach this office not later than **01/10/ 2021**.

The syllabus for the selection of Chief Vigilance Inspector/Electrical is enclosed as Annexure-A.

The notification and proforma of application can be downloaded from the S.C.Rly website [[www.scr.indianrailways.gov.in](http://www.scr.indianrailways.gov.in)] under the head About Us – Department-Vigilance-Selections.

Encl: As above.

  
(B.SRINIVASA RAO) 01.9.21  
Sr. Vigilance Officer/P  
For SDGM & CVO/SC

**Syllabus for selection to the post of CVI/Electrical(Written Test)**

**1.0 General Services**

- General power supply arrangements, air conditioning etc.
- Power Supply: HT & LT sources, power supply network, substation layout, overhead & underground distribution, maintenance & operation of transformers, switch gears, protective devices & distribution lines. Laying of Various types of cables.
- Construction, erection & commissioning of new sub station distribution lines, line calculations etc.
- House wiring, metering & safety precautions.
- Tariff & agreements, Relative merits of obtaining HT & LT supply, steps to reduce maximum demand, measurement of power, power factor, measuring demand etc.
- Water supply & requirement of water, planning of water supply system, sources of water, pipe line - frictional & other losses, discharge calculations.
- Reciprocating centrifugal & turbine pumps, relative merit, choice of VS & HS pumps, characteristic curve of pumps, efficiency drives, Electrical Connections & protections. Cavitation & priming of pumps, measurement of output with V-Notch & nozzle, necessity of multi stage pumping, storage capacity and purification of water.
- Preventive maintenance, special failure of pumps & motors, periodical overhaul.

**Air-conditions and Refrigeration**

- Central air-conditioning plant & package type system, refrigeration cycle, air changes, planning for capacity and drives for refrigeration plants, refrigerants and ducting.
- Specification, design & testing of water coolers, central as well as package plants. Requirements of water coolers, window coolers & refrigerators.
- Standby arrangement: DG sets, both petrol & diesel as also diesel pumps for water supply arrangements. Operation, maintenance and overhauling.
- Illumination, yard lighting, street lighting & town supply network. Drives for workshop machinery.
- Earthing & Bonding.
- Commissioning & maintenance aspect of conventional & maintenance free earthing arrangement for general service application.
- Maintenance of various equipment of sub-station, energy management, important instructions issued by Railway Board & RDSO.
- Energy consumption, Renewable energy, Solar, Wind and biomass.

**2.0 Train lighting and air conditioned coaches**

- Designs, construction, principles of working, schematic circuit diagrams of train lighting equipments used in train lighting system.
- Coach wiring, under frame wiring, schedule of rewiring, couplers, lamp resistance, junction boxes and fuses, Generation to non-generation ratio, lights, fans and water raising apparatus.
- Self generating coaches, End on-Generation, Head on Generation, power cars, electrical and mechanical components, layout, operation and maintenance procedures for slip coaches.
- Train lighting batteries, their maintenance, defects, analysis of causes of failures and remedial measures.
- Simplified system of train lighting, use of alternators, anti-theft measures.
- Fire in trains, preventive measures and precautions.
- Periodic overhaul and heavy repairs to train lighting equipment.

- Broad outlines of types of equipments used in 110 V and 415 Volt air conditioned coaches, scheme of refrigerated vans. Drives and their problems, maintenance and operational problems. Refrigeration, compressors their types in service and their problems, gear boxes, their maintenance and alignment. RMPU of AC Coaches.
- Maintenance schedules for AC coaches, partial AC coaches, AC I, II/III coaches, Sleeper coaches, Running Repairs.
- Coordination with Mechanical, Operating and Security Department.
- Important instructions issued by Railway Board, RDSO's SMIs, TCs and related investigation reports.

### **3.0 Traction distribution**

- Systems of electrification in use. Advantages and disadvantages of the different systems with emphasis on 2 x 25 KV system.
- Feasibility studies and justifications for track electrifications, preliminary planning and design, procedure followed in taking up electrification scheme, working drawing for execution of OHE wiring plans and OHE layout plans.
- Planning of layout of overhead equipments, Techno economic survey for electrification of new lines, foot by foot survey, prepegging plans, precautions to be taken while wiring new lines, foundation & their types & use of wiring trains, final checking, safety checks and certification, energizing of new lines, principles of preparation of layout plans, provision of return conductors.
- Overhead equipments – Types of overhead equipments, regulated and unregulated systems, stitches OHE, speed potential of various types of OHE, Centenary, contact wire, Dropper & Jumpers. Overlaps, clearances, Mast & portals, schedules of dimension etc. OHE foundations, DPR's.
- Maintenance problems with OHE, Foot patrolling, current collection, use of tower wagons, ladders & ladder trolleys, seasonal & cycle checks, maintenance schedule, Insulator cleaning, straightening of out of plump masts, earthing and bonds, return conductors, Preventive maintenance tools, types of Blocks & Procedure.
- Breakdown, TRD works during breakdowns and accidents, restoration procedure – both temporary and permanent.
- Overhaul schedule & anti-theft measures.
- Organization & working of maintenance depots, repair workshops, training of staff, safety measures and precautions.

### **Power Supply Installation:**

- Power supply arrangements, traction sub-stations, feeding stations, SSP & SPs, 132 KV transmission lines, Railway owned substations, transformer maintenance, circuit breakers, current and potential transformers, protective relays, auxiliary transformers, interrupters and isolators.
- Liaison with power supply authorities, monthly meter reading, control over maximum demand, emergency power supply arrangements, Automated Meter Reading.
- Maintenance of switching stations. Maintenance of SP/SSP & outsourcing activities of TSS.
- Remote control system, remote control equipment for AC substations and its working. Operation and maintenance of remote control, Specialized equipments for remote control work.
- Remote control centre, traction power control organization, permit to work, emergency arrangements, coordination with operating and other departments, Liaison with supply authorities, emergency phones, safety precautions for electrified section.
- Miscellaneous: Traction, stores and their accountal, regulation for electrical crossing of railway tracks.
- Important instructions issued by Railway Board, RDSO's SMI/MS. TCs and related investigation reports.

#### **4.0 Electric Locos**

- Description of locomotives in service, principles of operation and the characteristics of different types of locos used in Electric traction on the Indian Railways.
- Power, Auxiliary and control circuits: Their equipment, functioning, maintenance/overhauling schedules.
- Various types of bogies and bogie suspension and their components, power transmission from traction motor to axles, traction motor mounting arrangement ie, Jacqueman drive, Quill drive, WN coupler: their equipment, functioning, maintenance/overhauling schedules.
- Air, vacuum and Dual Break System, Air compressors, regenerative and rheostatic breaking, their equipment, functioning, maintenance/overhauling schedule.
- Function of electric loco sheds and electric loco workshops.
- Schedule inspection of locos ie. IA, IB, IC, AOH, IOH and POH.
- Records and Registers maintained in loco sheds, planning and progress organisation, statistical data, rolling stock organisation in sheds and shops, fire prevention, safety checks and history cards.
- Important instructions issued by Railway Board, RDSO's SMI/MS/TCs and related investigation reports, AC Traction Manual.

#### **5.0 EMU/MEMU/Metros**

- Utility of EMU trains for urban and suburban services vis-a-vis locomotives, various types of EMU stock – AC, DC and AC-DC, their salient features, rake formation.
- Power circuits, auxiliary, control circuits, break systems, bogies and other mechanical components, their equipment, functioning, maintenance/overhauling schedules.
- Inspection schedules of EMU/MEMU/Metros, troubleshooting sequence.
- Safety precautions and fire prevention checks.
- Maintenance and overhaul organization and liaison with other departments.

#### **6.0 Electric loco and EMU operation**

- Operation of electric locos with single unit and multiple unit and with rheostatic and regenerative breaking.
- Safety features to be followed in the operation of electric locos and EMUs.
- Failure of Electric locos and EMUs, their cause, investigation and remedial measures for avoiding failures.
- Inter-relation between electric, mechanical and operating department in functioning of electric locos and EMUS.
- Function of traction loco control organization.
- Preparation of engine links and driver links – power plan. Running Room & Crew lobby, claiming of various allowances of running staff.
- Compilation of operating statistics for electric locos and EMUs operation.
- Outstation organization for maintenance of electric loco and EMU.
- Working rules for preparation/operation of Electric Rolling stock.
- Recruitment and training of running staff – conversion training etc.
- Accidents and re-railing technique of locos and EMUs.

**7.0 OFFICIAL LANGUAGE:As per Railway Board,s Lr.No.E(GP)2005/2/8  
dt.20.06.2008**

<b>8.0</b>	<b>Stores &amp; Tenders</b>
	<ul style="list-style-type: none"> <li>• Classification of Stores</li> <li>• Procedure for drawal of Stores</li> <li>• Indenting Procedures</li> <li>• Procurement methods-Local purchase,Spot purchase</li> <li>• Estimates and Tenders,IREPS,E-Tendering process for works/service contracts,Tender Committee,Execution of works/service contracts</li> <li>• Direct Purchasing</li> <li>• Model Schedule of Powers,Indian Railways General Conditions of Contract(GCC),General Conditions of Contract for Services.</li> <li>• Incoming Inspection requirements</li> <li>• Scrap</li> </ul>
<b>9.0</b>	<b>Establishment Matters.</b>
	<ul style="list-style-type: none"> <li>• General Conditions of service of Railway servants including rules regarding leave, joining time, passes/PTO's.</li> <li>• Railway Service D&amp;A Rules-1968</li> <li>• Railway service conduct rules-1966</li> <li>• Retirement Benefits</li> <li>• Payment of Wages, Allowance and Overtime</li> <li>• Labour laws including payment of Wages Act, Workman Compensation Act, Hours of Employment Regulations, Factories Act, Industrial Disputes Act, Contract Labour Act, EPF,ESI.</li> <li>• Manpower planning &amp; Training</li> <li>• Welfare measures in Railways</li> <li>• PNM,JCM &amp; PREM</li> </ul>
<b>10</b>	<b>Financial Rules</b>
10.1	Parliamentary Control over Finance – Public accountability, Cannons of Financial Propriety
10.2	Railway Budget, Demand for grants, Expenditure Classification
10.3	Works Programme – Financial Justification for Works-Preparation of Estimates, Capital Budget, Control Over Capital Expenditure
10.4	Financial and Cost control in Railway Workshops, Sheds & Depot
10.5	Delegation of Powers
10.6	M&P Programme, RSP.
<b>11</b>	<b>Disaster Management</b>

(Enclosure to letter No G.180/CON/VI/Elct. /Vol. XII, dated 01.09.2021)

**Application for the Post Of Chief Vigilance Inspector/Electrical in Pay Matrix Level-7 of 7th PC**

Name	
P.F.No.	
Designation/Station	
D.O.B / D.O.A	
Substantive Grade/Level	
Date of entry into present Pay Level	
Educational Qualifications	
Whether punished as a result of Vig/SPE Cases	Yes/No
Whether worked earlier as V.I. or I.I in Railway Board	Yes/No
Working knowledge in Computers	Yes/No
Official contact phone No & CUG if any.	

Date:

Signature of applicant

It is certified that the above service particulars are verified and found correct. There are no DAR/SPE/VIG cases pending against him. The grading as per APARs and Educational Qualifications as per Service Register is as under.

Year	2018-19	2019-20	2020-21	Academic Qualifications as per SR
APAR Grading				
Integrity as mentioned in the APARs				
Details of undergoing Punishments /Contemplates				

Signature of Cadre Officer

Date:

Signature of Controlling Officer

Date