



# **SOUTH EASTERN RAILWAY**

## **Review of Staff Strength in the Electrical(G) Wing of Ranchi Division**



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**STUDY NO. EFF/910.**

## SYNOPSIS

1.	Name of the work study	Review of Staff Strength in the Electrical (G) wing of RNC Division.
2.	Terms of reference	Taken as one of the work-studies during the current FY.
3.	Aim	To analyze the present requirement of staff Electrical (G) wing of RNC divn after analysing the various activities that have become redundant.
4.	Projected manpower surrender.	14 'vacant' posts.
5	Anticipated/projected savings per annum	Rs. 69 lakhs (approx)
6.	No of recommendations	One
7.	Critical analysis & observations	Modern electrical equipments with advanced and automatic technology make several activities easier. It requires minimum human intervention to operate these equipments. Hence, the requirement of man power automatically decreases. The Electrical (G) wing of RNC Division has adopted various new technologies like Automation of pumps in 9 locations, switching of tower light at various location through automatic timers, 75% by 25% station lighting arrangement with automatic switches, underground cabling, laminated cabling, use of LED lights in place of conventional lighting, replacing of glow sign board with retro reflective board, solar lighting arrangement at L/C Gates etc. In addition, miscellaneous activities have been arranged through contractual agreement at Muri, RNC, Hatia, Bano & Ramgarh Rly colonies.
8.	Brief note on recommendations	<b>In view of modernization in technology including automation of switches, the requirement of man power in Electrical (G) wing may be reduced and 14 'vacant' posts in lower (D/R) grade of Helper may be surrendered considering chain vacancies.</b>
9.	Department/s concerned	Electrical (G)

## **ACKNOWLEDGEMENT**

Work Study Cell expresses its deep gratitude to the officials in the office of Divl Electrical Deptt (General) including the various units therein & Sr. DPO's Office/ RNC who have rendered their valuable guidance and co-operation in completion of the report.

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## **CHAPTER – I**

### **1.0 INTRODUCTION**

The modernization of Indian Railways changes the working scenario in many areas. Electrical Works associated with the installation, modification, removal, inspection or testing of electrical systems & components, including works relating to mechanical, electrical or non-electrical components. Emergency maintenance includes emergency repair of electrical systems that require immediate action and take precedence over routine maintenance activities for the duration of the emergency. The department also maintains high mast lighting equipments on high mast poles complete with luminaries which includes raising and lowering devices consisting of ring assemblies and pole anchorage assemblies. The maintenance also includes both routine and non-routine maintenance work of regular electrical appliances.

In RNC Division several new steps have been taken by Electrical (G) wing for effective electrical usage with power saving and maintenance free equipments. System for automation of pumps installed at 3 locations, timers have been setup in tower lights in various locations which enable illumination and switching off of tower lights at different locations at same time without manual intervention. Lighting arrangements at RNC & Hatia stations has been done with automatic switches that illuminate 75% by 25% as per arrival time of trains at stations. Similar programmed switches are in the process of being installed in other important stations. Conventional bulbs have been replaced by LED lights which are durable and energy efficient, glow sign boards have been replaced by retro reflective board at all the yards. Solar panels have been installed for lighting in LC gates. In addition, miscellaneous electrical works have been out sourced at RNC, Hatia, Muri, Ramgarh and other residential colonies. The sections which consists of works like tree trimming, changing of HT-LT conductor, Re-wiring, cable laying, submersible pump repair, light/fan replacement, shifting of transformer, repair of switches and other work. The departmental vehicle is also under contractual hire. The major works including re-wiring and new wiring have been given to contractors. The Electrical (G) works at RNC division are being managed by supervisory posts like SSE & JE who are assisted by Sr. Technicians, Technician Gr.-I, Gr.-II, Gr.-III posts with the helping hands of Helper

The subjected study has been taken up as one of the studies in current financial year with a view to identify those posts which could be rendered surplus considering the activities that have been outsourced without hampering the current working system.

**CHAPTER – II**

2.0 **STAFF STRENGTH OF ELECTRICAL (GENERAL) CATEGORY IN RNC DIVN**

S1	Category (PL Group)	GP	Sanct	Act	Vac	Excess
1	Sr. Tech	4200	24	23	1	0
2	Tech-I	2800	48	40	8	0
3	Tech-II	2400	8	7	1	0
4	Tech-III	1900	10	7	3	0
5	Helper	1800	58	57	1	0
	TOTAL		<b>148</b>	<b>134</b>	<b>14</b>	

## **CHAPTER – III**

### **3.0 EXISTING SYSTEM OF WORKING :**

Electrical Work means work associated with the installation, modification, removal, inspection, maintenance or testing of electrical system components, including works relating to mechanical, electrical or non-electrical components required for the work. Emergency maintenance includes emergency repair of electrical equipments/ circuits that requires immediate action and takes precedence over routine maintenance activities for the duration of the emergency, till rectified. This wing also maintains high mast lighting equipment on high mast poles complete with luminaries, raising and lowering devices consisting of ring assemblies and pole anchorage assemblies. The maintenance includes both routine and non-routine maintenance work of installed electrical appliances.

The Electrical (G) wing functioning at RNC division is managed by supervisory posts like SSE & JE who are assisted by Sr. Technician, Technician Gr.-I, Gr.-II, Gr.-III posts with the helping hands of Helper.

Modern technology has been introduced in various activities that were earlier managed manually. System for automation of pumps installed at 9 locations, timers have been setup in tower lights in various locations which enable illumination and switching off of tower lights at different location at same time without manual intervention. Lighting arrangements at RNC & Hatia station has been done with automatic switches that illuminate 75% by 25% as per arrival time of trains at platforms. Similar programmed switches are in the process of being installed in other important stations. Conventional bulbs have been replaced by LED lights which are durable and energy efficient, glow sign boards have been replaced by retro reflective board at BKSC, Muri & Hatia yards. Solar panels have been installed for lighting in LC gates. In addition miscellaneous electrical works have been out sourced which consists of works like tree trimming, changing of HT-LT conductor, Re-wiring, cable lying, submersible pump repair, light/fan replacement, shifting of transformer, repair of switches and other work. The departmental vehicle is also under contractual hire.

## **CHAPTER – IV**

### **4. CRITICAL ANALYSIS AND RECOMENDATION**

Modern electrical equipments with advanced and automatic technology makes several jobs easier and without manual observation/ intervention. These equipments require minimum human intervention for operation. Hence logically, there is a lesser requirement of man power. The Electrical (G) Department of RNC Division has adopted various new technologies like Automation of pumps in 4 locations, switching of tower lights at various location through automatic timers, 75% by 25% station lighting arrangement with automatic switches, underground cabling, laminated cabling, use of LED lights in place of conventional lights, replacing of glow sign board with retro-reflective boards, solar light panels for lighting in L/C Gates etc. In addition to that miscellaneous activities have been outsourced through contractual agreement at various locations.

#### **.4.1 RECOMMENDATIONS**

**Recommendation – I** : In view of modernization in technology including automation of switches in Electrical (G) wing, the requirement of manpower in the Electrical (G) wing may be reduced and 14 ‘vacant’ posts in lower (D/R) grade of Helper, considering chain vacancies, is recommended for surrender.



## **CHAPTER – V**

### **5 FINANCIAL EVALUATION**

In reference to the recommendations made in the study report the financial evaluation on the basis of surrender of 14 ‘vacant’ posts is as under:-

<b>Sl</b>	<b>Desgn</b>	<b>No. of posts</b>	<b>Level</b>	<b>Pay</b>	<b>Avg. Pay</b>	<b>DA @ 9%</b>	<b>Monthly cost per staff</b>	<b>Total cost per month</b>
1	Helper	14	1	18000- 56900	37450	3370	40820	571480
<b>TOTAL</b>		<b>14</b>						<b>5,71,480</b>

The annual savings due to surrender of 14 ‘vacant’ posts= Rs. 5,71,480 x12  
= **Rs. 68,57,760/-**  
Say **69 lakhs per annum**

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