Technical Pre-Qualification Requirement (PQR) of Axle generator AG903CX/M

Ref. No.: PQR/AG903CX/M/001 **Date: 18.10.18**

The Pre-Qualification Requirement of Axle generator AG903CX/M is as under:

Sl No.	Description	Vendor to comment	
		Yes/No	Supporting relevant document submitted
1.	Axle generator AG903CX/M should be as per BHEL drawing no. 14380020001 Rev. 01.	Yes/No	• Deviation (if any), should be clearly mentioned.
2.	Availability of manufacturing/ Testing facilities required to manufacture/test axle generator as per details given in Annexure-1 (enclosed)	Yes/No	• List of inhouse testing facilities to be submitted. • Outsourced facilities (if any) should also be submitted.
3.	Manufacturing and supply experience in preceding 3 years (from tender opening date) of same/similar * item.	Yes/No	• Unprice PO copy
4.	Production capacity of the firm for this item per month/annum	Yes/No	• Production capacity
5.	Vendor to furnish QAP that shall be followed during manufacturing of Axle generator.	Yes/No	• QA plan

Notes:

1. **(*):Axle Generator supply for railway application shall be considered as similar item.**
2. **Compliance of above Technical PQR is mandatory. In absence of compliance of above vendor offer is liable to be rejected.**

Prepared By:	Approved By
18/10/18 TME	18/10/18 TME

Annexure-I

Brief Write Up for Axle Generator Type AG903CX/M

Introduction

The Axle Generator shall be mounted on and directly driven by the locomotive axle, supplies speed dependent electric signals for the initiating the transition. The output signal of the axle generator shall be fed to an electrical speedometer to indicate locomotive speed.

Construction

The axle generator shall be a permanent magnet single phase a.c. machines consisting of cast aluminium frame, stator, rotor, a permanently lubricating bearing assembly and a spade shaft to couple with locomotive axle. The stator consist of bar magnet placed axially with alternate polarity, electrical sheet steel laminations and a circular coil, all embedded in an epoxy moulding. The rotor shall be epoxy moulded and consist of steel laminations, and brass hub for mounting on shaft. The bearing assembly shall consist of a double row sealed bearing.

As the rotor turns, the laminations and make and break magnetic circuits around the stator coil, by shorting alternate magnets of likewise polarity once in each cycle. Because of this alternate and make of flux produced by each set of likewise polarity magnets, a voltage shall induce in the stator coil which varies linearly with speed. This variable a.c. voltage shall be fed to a panel mounted saturable transformer, rectifier and filter. The outcome will be a d.c. signal which will be used for operating motor main contactors and field weakening contactors so as to set required traction motor combination and field strength.

Technical Details-

No. of Poles /magnets		40
Stator coil resistance at 20°C		68 to 91 ohms
Maximum Speed		900RPM
Weight		6Kg
Drawings : Outline		14380020001
Speed output across 50K ohms load:	at 800RPM	13.5 to 20V D.C.
	At 900RPM	15 to 22.5V D.C.