Extract taken from file No 2011/Proj/JP/2/1(Pt)
S100.17
S.No. 2

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

2011/Proj./JP/2/1(Pt.) New Delhi, dated 12-06.2013

Managing Director,
Jaipur Metro Rail Corporation Ltd.,
Khanij Bhavan,
Behind Udyog Bhavan, C-Scheme
Jaipur- 302005.

Sub: Approval of Signaling System (E1/E2) for Jaipur Metro Rail Corporation Ltd.

Ref: JMRCL's Letter No. F 7 (B-17) JMRC/RDSO/2012/Part-VII/1159 dated 28.5.2013. S No. 29

In reference to your letter cited under reference, "In Principle Approval" is conveyed to Jaipur Metro for Phase I and Phase II or Final Phase is being conveyed, with the following stipulations:-

(a) Compliance of observations made in RDSO's letter no. UTHS/18/JMRCL dated 01.05.2013 (Copy enclosed) by Jaipur Metro.

(b) The ATP System shall comply to following:
"(1+1) Redundancy as per prevalent & proven technology meeting specified RAMS requirements with Automatic switch over to stand-by ATP system without manual intervention. However, Manual switch over to stand-by ATP shall also be available to be used in case of failure of automatic switch over system".

(c) The Signal and Telecommunication Systems proposed to be provided by Jaipur Metro shall be as under:

Signalling Systems

SN	Description	Minimum requirement	Remarks for JMRCL	Remarks of Signal Dte.
1.	Type of Signaling	Cab Signalling, CATC (ATP, ATO, ATS), ATP and ATS are essential, ATO is optional	ATP, ATO, ATS being provided for Final Phase of Operations. Systems similar to that provided and proven in DMRC.	Approved
2.	Back up Signaling	Line side (CLS) at entry and exit at all interlocked stations.	Yes being provided both in Initial and Final phase of Operations.	Approved for Phase I & Phase II or Final Phase

3.	Interlocking	EI with built-in block working facilities	Yes being provided. Systems similar to that provided and proven in Line 1 & 2 DMRC.	Approved
4.	Train Control System	CATC (ATP, ATS, ATO Optional)	ATP, ATO, ATS being provided for Final Phase of Operations. Systems similar to that provided and proven in Line 1 &2 DMRC.	Approved
5.	Type of Track Circuits	Coded Audio frequency Track Circuits (AFTC)	Yes, being provided. Systems similar to that provided and proven in Line 1 &2 DMRC.	Approved
6.	Point Machine			
	1. For Main Line	Non-trailable high thrust, high performance point machine	Yes, being provided. Systems similar to that provided and proven in Line 1 &2 DMRC.	Approved
	1. For Depot	Trailable high thrust, high performance point machine	Non-Trailable proven Indian Point Machine as per IRS S-24 being provided. Previously provided & proven in DMRC	Approved Non-Trailable
7.	Redundancy in cab equipment for ATP (Cab Sig.)	1 + 1 (hot standby)	1÷1 Redundancy by Front – Rear Cabs in Final Phase of Operations being provided. Systems similar to that provided and proven in Line 1 &2 DMRC.	"(1+1) Redundancy as per prevalent & proven technology meeting specified RAMS requirements with Automatic switch over to stand-by ATP system without manual intervention. However, Manual switch over to stand-by ATP shall also be available to be used in case of failure of automatic switch over system"

Telecommunication Systems

SN	Description	Minimum requirement	Remarks for JMRC	Remarks of Telecom Dte
1	Tele Communication	Integrated System with OFC Train Radio, CCTV, Centralised Clocks, PA system, with the additional provision that Train Display Boards at Stations should also be integrated in the system. Regarding Train Radio System, it should be fully digital and duplex system, the standards may be chosen based on techno-economic considerations`	Integrated System of OFC, CCTV, Centralised Clock, PA, PIDS and Digital Train Radio (TETRA) being provided. TETRA technology is Fully Digital and supports Full Duplex also. Systems similar to that provided and proven in DMRC.	Communication System as planned for the Jaipur Metro is approved subject to using only proven system.
2	Positive Train Identification (PTI)	Provided with interface between ATS and Train Radio	PTI will be provided in Final Phase of Operations between on-board ATC & ATS through Down Link Receptors, as provided and proven in DMRC Line 1 & 2	

Note:

Although, the systems proposed for Jaipur Metro project, can be considered as generically approved systems, specific application approval is considered more important. JMRC may have to bring in a process of comprehensive internal as well as independent verification and validation (IV&V) of the system design, configuration and application data at each stage of design approval, installation & commissioning and subsequent maintenance for Jaipur Metro project.

In addition, an Independent Safety Assessment (ISA) of the Signalling System would be necessary to be done by agencies of repute to be identified by Jaipur Metro and approved by RDSO.

13/4/13

(Avinash)
Deputy Director/Project
(Railway Board)

Copy to: ED/UTHS/RDSO with reference to his letter No. UTHS/18/JMRCL dated 1.5.2013. (S.No.21)

PP-Dove 14/6/13

रेल मंत्रालय
Ministry of Railways
रेलवे बोर्ड/Railway Board
जारी किया गया
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Date of Issue