Minutes of the meeting of the Consultative Meeting of the Metro Railways held under the chairmanship of Dr. Sudhir Krishna, Secretary (UD) on 29.6.2012 at RDSO, Lucknow.

The list of participants is enclosed at Annexure.

2. Shri S. K. Lohia, OSD(UT), MoUD welcomed the participants and requested Shri V. Ramachandran, Director General, RDSO to address the participants. Shri Ramachandran welcomed Secretary (UD), Member Engineering Railway Board, Chief Commissioner for Railway Safety, Advisor Rolling Stock, Railway Board, OSD(UT) & E.O. Joint Secretary and all other participants. In his address, he stated that it was the privilege of RDSO to host the first meeting of the Advisory Board for Metro Railways which has unfortunately been converted into a consultation meeting for metro railways today because of some administrative issues.

3. DG, RDSO mentioned that with the growth in Indian economy, urbanization in India is taking place at a rapid pace. At approximately 30% decadal growth in urbanization, transportation within cities is becoming a major issue. In fact, if we do not act fast enough, this could turn out to be a major dampener to the economic growth of the nation. This can be gauged from the fact that while coming for this meeting from Trans-Gomti area one must have had first-hand experience of the challenge of urban transport even on the main arterial roads of not so large urban agglomerate like Lucknow.

4. He further stated that MoUD and a few State Governments have already taken the initiative to set up mass rapid transit facilities for major urban agglomerates. Metro rail is really capital intensive and also practically developing a metro rail system in an already established city takes several years. It is imperative that all the stakeholders join together, develop some common guidelines to ensure efficient, safe and economic rail based mass transit systems in the least possible time. Realizing the need to contribute positively in streamlining the process of discharging the role assigned to Indian Railways, RDSO have already set up a new multi-disciplinary Directorate viz., Urban Transport and High Speed Directorate to deal with technical issues of Metro Railways and to act as single window between RDSO and Metros.

5. He stated that Standardization of guidelines for uniform specification / tender conditions and indigenisation of metro rail systems and their sub-systems is a pre-requisite for a vast nation like ours, where urban population is expected to go up to 473 million by 2021, and there is already serious need of metro rail systems in a large number of cities. Once standardization is achieved, the indigenization of the components will also take place and the metro solutions will be available to the operators at competitive costs. The availability of spare parts will also improve. As an example, he stated that perhaps risking serious difference of opinion from a large number of Metros,
the width of the coaches is different for different metros and most of the metros are using coaches of 2.8 m width. There is a need to standardize coach width to 3.2 m - 3.3 m especially keeping in mind for the future Metros so that even the coaches can cater to the future need. There is a need to address issues of standardization of metro systems and sub-systems on priority. He added that even in High Speed Train operation on standard gauge, Japan, the pioneers in HSR operation, have been using 3.4 m wide coaches.

6. He further mentioned that RDSO has a very good institutional base for carrying out research and design for Railway systems. The facilities at RDSO could be seen in the second half of the session. Metro Railway systems, compared with the Indian Railway systems are not much different. As regards signalling and automation, in this field also Railways has made sufficient progress namely Automatic Train Protection (ATP), Train Protection and Warning Systems (TPWS) etc. Metro Certification work can be carried out by RDSO and the UTHS Directorate shall be suitably strengthened for this. Therefore, the technical solutions for metros can be provided by RDSO without huge additional expenses and duplication of resources. Further, it will have to find out new methods of financing Urban Transport, as the budgetary sources are quite limited. The paper on innovative financing gives insight in this direction but the method given in the paper needs to be suitably legislated by Central Government and State Governments. He made one suggestion with regard to justification for financing of urban transport systems. He said that if the loss of productivity, wastage of fuel in traffic jams, cost of health hazard etc. are quantified, seemingly very high cost of urban transport will be offset to an appreciable extent by the benefits accrued and saved investments in other areas. Simply, if a person wastes his three hours in daily commuting, at least 25% of the productive time is being wasted of the working population.

7. Secretary (UD) in his opening address stated that it was a great pleasure to gather here in the first of its kind meeting. Members might have seen the communication from Department of Expenditure, Government of India, asking as to whether there should be one Metro Advisory Board or one Advisory Board for every Metro and so on. These are the legal technicalities and which should be resolved soon.

8. He reiterated the commitment of Government of India on urbanization which can be seen in the Plan document and the series of Working Groups working on urban issues. He stated that the urbanization is the future of country’s economy growth. Ever since independence, for varieties of reasons, it is being said that India lives in villages. We do get food from the villages and are proud of it and grateful for it, and also all of us still have roots in villages even after one generation and two generations. However, realistically, it is urbanization which is needed for the country to grow and reach where the developed countries are. Even within the country, the statistics of 2011 census shows, that the more urbanized States have better per capita income. The States which are least urbanized have many problems including low per capita income, low literacy rates, high mortality rates etc. He mentioned that according to the census, urbanization level is about 31%
which is not enough. For sustainable rural development, rural people must have reasonably good holdings. He pointed out that the land holding per family has been reduced to 1 hectare since independence. He pointed out that the Jawaharlal Nehru National Urban Renewal Mission was mooted only 7 years before, for the betterment of urban areas but the results have been encouraging. He emphasised that the urban areas must be planned well so that people could get better facilities and live in neat and clean environment. He also emphasised that cities should be designed for all segments of the societies i.e. separate areas for industrial development, commercial, residential activities, sport activities parks, schools etc. He mentioned that urbanisation is the key for development of the country. Planned urbanization based on transit oriented development and with proper transit commutation linkages are essential. He said that it has been proved that urban project could, by and large, pay for themselves. He said that metros are the great drivers of the development. He said that due to the problem of commutation, women often do not go farther for work from their homes, under safe public transport is provided. He said that metros are being supported by everybody and the States are also coming forward. He complimented the State Government of Kerala for the Kochi Metro Rail Project and expected that other State Governments will also come forward with the proposals of metro rail and other MRTS projects. He suggested that in the next meeting, the representatives of other State Governments should also be called. He requested all the metro companies to prepare a report on the design of the metro and its impact on the economy. He mentioned that Rs.20-30 thousand crore have been invested in metro projects which is expected to go up as 20 more cities are likely to come up for metros. He said that the Agenda of the meeting is very elaborate and it may not be possible to discuss each issue in full. He mentioned that National Manufacturing Competitiveness Council (NMCC) has encouraged for standardization and indigenisation. He expressed his concern that it is not good to go external aid such as JICA loan and we must try to mobilize domestic savings also for the projects. He said that for the first time, State Bank of India has sanctioned loan for Bangalore Metro for 18 years and expected that other banks will also come forward in a similar fashion. Before concluding, Secretary (UD) thanked Shri Ramachandran, DG, RDSO and his team for agreeing to organising the meeting very gracefully and promptly. He said that RDSO is a prime organization of the Railway and the prestige for the country. He then requested Shri A.P. Mishra, Member Engineering, Railway Board to address the gathering.

9. Shri A.P. Mishra, Member Engineering, Railway Board, complimented Dr. Sudhir Krishna, Secretary (UD) for coming up with the idea for creation of Metro Advisory Board. He said that he had happily agreed to be a member of this august body. He mentioned that due to some reasons, at the last moment the full-fledged meeting of the Advisory Board could not take place. He recalled the first Centre / State participation project of Konkan Railway by MoR. The same concept was then followed for Delhi Metro Rail Corporation. He mentioned that the urban sector deserves to have a good transport system. He said that in the metro projects and in the proposed metros there is a huge investment and it is expected to go up. In view of this, he
emphasised that there is a need for synergy of knowing each other better and also of a common platform. The expertise of Delhi Metro could be availed, as they have rich experience in operating metro. He said that as far as Ministry of Railways was concerned, it is the only organisation for Railway Transport. He suggested that the technical issues had to be resolved quickly in the shortest possible time. However, MoR should never be left out of Metro development. In the fast emerging technologies, on certain specific issues, MoR/RDSO may not have full details and hence sometimes a little extra time is required for resolution of the issues posed by metro rail administrations. He suggested that different metros may gain from the vast experience which Ministry of Railways has in the operations. He pointed out that considering the importance of the issues, a new Directorate has been started for urban transport and high speed in RDSO. He gave assurance that whatever assistance is required from MoR, the same will be provided.

10. Shri Prasant Kumar, CCRS, mentioned that transport was important for every area. He stressed the need to provide systems so as to ensure reliability and availability. He pointed out that the experience of DMRC, who have a lot of data on metros, should be shared. The new Directorate, which had been created in the RDSO, should adopt new way of thinking from the earlier trend when the stress was only on rule based things. In the world, people have adopted risk assessment for safety, even for economic planning, and similar approach should be adopted for safety too. The structure should be so sound that day-to-day tinkering was not required.

11. Shri R.K. Bhatnagar, Advisor Electrical, who was representing Member Electrical, Railway Board stated that there was a need of Metros in several of cities. It was desirable to standardize the systems such as voltage systems, signalling systems, trains and platforms. He expressed his concern that at times, the proposal for clearance is received in MoRs after the construction work is over and MoR have very little room for scrutiny. He said that in the last two cases, like DMRC and Airport Express Line, they have received files only a month before and they were under pressure because CCRS required clearance of Ministry of Railways for clearing the track for commercial services. He spoke about the rolling stock for the same type of traction system which have different specifications. He said that there is a need to follow some standards as RDSO sets standards for various Zonal Railways. He emphasised that there is a need for separate organization for setting standards and that organization should be conversant with the institution from the industries abroad, besides using the expertise of High Speed Directorate of RDSO. He said that the cost at which metro systems were being procured, is high. The sole object should be to get this cost reduced. In the case of indigenization and locomotives, initially, it had been imported for Rs. 28 crore per loco. However, at present, after 10 years, owing to near complete indigenization, the cost is around Rs. 15 crore per loco. This could be made possible because the technology has been developed with multiple vendors which were all local. He mentioned that the indigenous development of equipment has been started and the cost comes to Rs. 3.5 crore. He mentioned about the huge investments involved in the rolling stock and the plan for standardization of rolling stock and how to go about indigenization be
made. He pointed that Delhi Metro had also started this exercise, by imposing a condition that a particular percentage will be manufactured in India for the producers like M/s Bombardier. Copies of all the presentations made are placed on the MoUD website www.urbanindia.in. He said that the imported content should be looked into so that the cost comes down.

12. After the address, all metro railway administration were requested to make presentation. Shri N.V.S. Reddy, Managing Director Hyderabad Metro Rail Corporation gave the presentation on the progress of Hyderabad metro. During the presentation, he informed the progress made so far, problems being faced and the need for timely clearance required from the Ministry of Railways / CCRS and the need to have metro administrations on the Metro Advisory Board.

13. After the presentation of MD, Hyderabad Metro, Shri A. P. Mishra stated that the proposals should be submitted well before the job is done, otherwise it is very difficult to give approval in a short time period. For the safety certification, the proposal should be submitted early, so that CCRS will also have the time for examining the proposal because all the aspects relating to the safety are to be looked into. He further assured that time for approvals would be monitored. Secretary (UD) stressed on the need of regular and joint inspection with the concessionaire to ensure that laid down systems are being followed strictly and the Quality as well as Safety are not compromised. DG/RDSO mentioned that in order to cut down delays in approvals, MoR and RDSO have tried to put the requirements of details to be submitted, and all that is being compiled in the form of a manual.

14. Shri Tom Jose, Managing Director, Kochi Metro Rail Ltd., gave the presentation on the Kochi Metro. He explained the problems being faced by them in the city. He informed about the details of the Kochi Metro Rail project, its financing pattern, sources of innovative funding, steps taken by the Government of Kerala and the steps which would be taken up during the execution of the project.

15. Managing Director, Kochi Metro said that there are 5 canals in Kochi and these canals should be used for a wider ways. He informed that it is the only city which has canals. He stated that one of the stations will also be the biggest bus terminal. Stations are being planned to have multi model integration with water transport also, besides buses.

16. Secretary (UD) suggested the circle rates for the city properties should be revised regularly in the influence zone of metros. He stated that the metro alignment should be shown in the Master Plan of the city and duly notified.

17. Shri J. K. Verma, Chief Engineer, Metro Railway Kolkata gave the presentation on Kolkata Metro. He informed the historical background of the Kolkata Metro projects. He gave the information on the metro services under operation, operating information, fare collection, structure & type of tickets, financial performance, initiatives taken on security, information on track & rolling stock, traction power supply to 3rd rail, signalling and train protection
arrangement and communication arrangements. He also gave the information on the metro projects which are under execution the constraints in execution of metro projects.

18. After the presentation, Shri A. P. Mishra, Member Engineering Railway Board said that KMRC was going to come under the MoR. The Kolkata Metro on completion would become at par with Delhi Metro in terms of total network.

19. Secretary (UD) suggested that more underground alignment may be provided to avoid the delay in acquiring land wherever required. He suggested that fare should be revised regularly, duly included to the cost of the inputs.

20. Secretary (UD) informed about difficulties being faced on acquiring Government land for metro project. He also informed that the matter of land issues had been taken up in the meeting of the Empowered Committee. He stated that a Draft Cabinet Note on the subject has been prepared where cash for land as the standard principle has been proposed.

21. Shri Subrata Gupta, Managing Director, KMRCL gave the presentation on East-West Metro Corridor of Kolkata. He said that formal Metro Advisory Board is a welcome step. He gave information on the final selection of the alignment, proposed fare, current status of land acquisition, details of funds released by GoI, GoWB and JICA till 31.5.2012, expenditure incurred so far, status of the packages, physical and financial progress of the packages which have been awarded. He highlighted the issue of demand for change in alignment to connect Esplanade area.

22. All the MDs present opined that once the project has been sanctioned, the change of alignment is to be resisted at all cost as every metre of alignment will have objections. MD/MMRC further mentioned that the best way is to have metro alignment as a part of Master Plan. MD/Kochi Metro was of the opinion that till the time tendering is done, we can be slightly open about alignment. Secretary (UD) mentioned that KMRCL must take a stand on the alignment issue. He mentioned that there is difficulty in releasing the money without contribution from the State Government.

23. Shri Ashwani Saxena, Commissioner (RC), UDH, Government of Rajasthan gave the presentation on Jaipur Metro Rail. He informed that according to the geography of Jaipur, the metro has been planned in two corridors i.e. one is close to north side and another to East West. He said that the East West corridor has been taken in the Phase-I and its total length is 12 kilometre where elevated section is from Mansarover to Chandpole which is 9.2 kilometre and underground portion is from Chandpole to Badi Chaupar. He explained the work undertaken by them relating to the acquiring of land, civil work, planning of routes, financing pattern, O&M strategy etc. He also informed that they have planned to start the commercial operation by July, 2013.
24. Secretary (UD) said that the metro planning is the planning for the city and the process for preparation of Master Plan is a well thought out plan in a legal way. He suggested that the Master Plan should cover the transit corridor, FAR, etc. and be notified for the knowledge of people. He also suggested that a formula on the base rate of FAR should be adopted which is desirable along with metro corridor on the way. He further mentioned that the O&M model proposed by JMRL need to be immediately revisited with open mind. JMRL should send a note on this immediately to MoUD and also have consultation with CMRL and Hyderabad. He desired OSD(UT) and Shri Satish Kumar of DMRC to look into this aspect within next 15 days.

25. Shri Satish Kumar, Director (Electrical), Delhi Metro Rail Corporation (DMRC) gave the presentation on the progress on DMRC. He gave the information on the background of DMRC, its progress & achievements so far, operation highlights of DMRC, operational results, benefits of the Phase-I & II of DMRC, information on the present status of Phase-III & its extension to NCR, financial progress, information on the lessons of 10 years O&M on the Operations and way forward for Phase-III. He has also informed that few amendments in O&M Act were being proposed by them for ensuring a convenience to passengers and smooth operation of train services. He also raised the issue of availability of spectrum for signalling requirements of metros and requested MoUD to take up this issue with DOT at the earliest for allocation of 10 spot frequencies for voice communication through TETRA.

26. Secretary (UD) desired that the amendments in Metro Acts be prepared in juxtaposition and circulated to all stakeholders for comments. He requested DMRC to send a Note on the spectrum issue.

27. Shri S.V.R. Srinivas, Managing Director, Mumbai Metro Rail Corporation in his presentation, explained the feature of the project of the Mumbai Metro and stated that Line 1 of Mumbai Metro Railway is Varsova - Andheri - Ghatkopar covering about 12 stations and distance is about 11.40 km (elevated). The total cost of the Line is about Rs. 2356 crores. He also described the progress of civil works, financial progress and other issues of Line 1 and expected that the Line 1 of Mumbai metro will be commissioned by March, 2013. Line 2 is Charkop-Bandra-Mankhurd covering about 27 stations (Elevated) and distance is about 31.87 km. The estimated cost of the project is Rs. 8,250 crores. The work on Line 2 was to be started in 2011 and expected to be completed before 2016. However because of the issue of land for depot and construction yard, the work has not begun on ground. Line 3 is Colaba-Bandra-SEEPZ covering about 27 stations (underground) and distance is about 33.50 km. The estimated cost of the project is about Rs.24,430 crores which is presently under sanction by GoI. He stated that if alignment of metro is notified in the Master Plan then it will be very difficult to change it. Accordingly, the Master Plan of Mumbai is being revised to show the metro proposals. He suggested empanelment of Independent International Certification agencies.
28. CCRS mentioned that CCRS report to all State Governments, as mentioned in the proposed amendments to the Central Metro Acts, is not possible. MD/KMRC mentioned that the Metro (O&M) Act should be amended and extended to Kolkata also.

29. Managing Director, BMRCL stated that in his view there should be a separate Commissioner of Metro Rail Safety. It may be under the Chief Commissioner of Metro Railway safety. He also said that the cost of security personnel is not included in the DPR.

30. Secretary (UD) said that the suggestion of separate Commissioner (s) for Metro Rail Safety can be agreed to. In respect of cost of security personnel, Secretary (UD) said that this issue will be discussed separately and in this regard DMRC has made some proposal.

31. Shri K. Rajaraman, Managing Director, Chennai Metro Rail Ltd (CMRL) in his presentation requested Ministry of Railways to strengthen their suburban services, signalling system etc. like Mumbai sub-urban services. He also stated that as per their study the share of public transport is falling down as compared to private transport used by the people. He stated that CMRL has two lines one is from Chennai Central to St. Thomas Mount Station and other one is from Washermanpet to Airport. He mentioned that it is expected that the Chennai Central Line is expected to be completed by December, 2012. He also informed that CMRL has already spent Rs. 3867 crore so far which is about 26% of the total estimated project cost. The project was started in 2009 and expected to be completed very soon. He also described the progress of civil work, financial progress and other issues of CMRL. He also informed that trials for Stage-1 which is 11 km from Koyambude to St. Thomas Mount will be started by the end of 2013. He mentioned that Stage-1A which is 10 km from Saidapet to Airport is to be commissioned by the end of 2012 and Stage-2 which is 24 km underground will be commissioned by the end of 2015. He mentioned that CMRL has taken engineers from each utility agency on its rolls which helped in timely shifting of utilities. He also stated that Metro Advisory Board is a very good development.

32. Regarding Regulatory clearances, MD/CMRL suggested that MoR/RDSO role should be to set standards and do safety audit. There should be time limit for approvals. There should a provision for ‘O&M’ operations as distinct from metro Rail administrations in the Metro Acts.

33. Secretary (UD) mentioned that even though Metro Rail Administrations may engage an ‘O&M’ operator, regular inspection is must also by Metro Rail Administration. Shri Rajiv Chaudhury, Executive Director (Works Planning), Ministry of Railways informed that MoUD and MoR have set up a Committee for technical approval in which the members from metros have been included.
34. Shri N. Sivasailam, Managing Director Bangalore Metro Rail Corporation (BMRC) in his presentation informed that Reach 1 of 7 km has been commissioned on 20th October, 2011 and about 60 lakh passenger trips have been made so far. In Reach 2, 89% of the work of viaduct has been completed and 45% progress has been recorded in the stations and civil works. These works are expected to be completed by December, 2012 and commencement of trials will begin by April, 2013. He informed that in Reach 3, launching is almost coming to completion, 96% of the work is already completed, construction of stations is about 60% completed and remaining civil works are expected to be completed by December, 2012 and commencement of trials will begin latest by January-February, 2013. He further informed that in Reach 3A, 90% progress has been achieved in the construction of viaduct, about 45% of civil work is completed and commencement of trials will begin by January-February, 2013. During presentation, he expressed the way of raising the funds for Phase II etc. He suggested that in view of very fine control possible in metro systems, the speed reduction from the trial speed should be exact and not rounded off to cover number.

35. Secretary (UD) suggested that the land scaping and design of the piers and girders should be made carefully so that they could look better and more colourful so as to merge with urban landscape.

36. A presentation on Rapid Metro Rail, Gurgaon, country’s first complete private initiative was given by Shri Sanjiv Rai, Managing Director. He mentioned that all the land required for the project is to be acquired by Rapid Metro Rail, Gurgaon. He stated that Phase 1 of Rapid Metro Rail, Gurgaon is about 6 km section and connected to Delhi Metro Railway Station near to Sikandarpur Station. He informed that 1 km of track has already been installed and remaining will be installed within 3 months time. He mentioned that they have the agreement with Haryana Government to complete the work within 30 months and it is expected to be completed within 30 months. He stated that the biggest problem faced by the Rapid Metro Rail, Gurgaon is acquiring of the land. He further informed that Rapid Metro Rail, Gurgaon works on 750V DC on 3rd Rail Traction System instead of 25 KV AC. He said that they have expected to put the first rake in commercial service by April, 2013. He also described the progress of civil work, financial progress and other issues of Rapid Metro Rail, Gurgaon. He also stated that two train sets are ready at the works site of Siemens and expected that the first rake would be arrived at Gurgaon in August, 2012 and after that every month one train set shall arrive at Rapid Metro Rail, Gurgaon. He also informed that in Phase-II, they are planning the extension of 14 km.

37. Secretary (UD) said that the list of issues relating to NHAI may be sent to the Ministry. He suggested that care should be taken in the training activities. All metro should give training to their staff in the current year. He said that the suggestions / views on the standard performance formats may be given by all metros. He also said that Shri I.C. Sharma’s team has prepared a paper on standardization and indigenisation and comments on the same may be given by all metros.
38. Managing Director, CMRL said that new metros are coming up and to train people there is no national training centre. He suggested that the Delhi Metro training centre could be made National Metro Training Centre.

39. Shri A. P. Mishra, Member Engineering, Railway Board in his concluding remarks said that a very good interaction has been held and he is highly impressed with the work to be done by all the metros. He said that there are innovative design, innovative station buildings, innovative method of financing and also new methods of control and also contracting. He mentioned that most of the metros are maintaining the time lines that have been given to them. He said that Ministry of Railways will provide all the support that is required. He pointed out that different consultants give different solutions in regard to the signalling, construction of structure, safety, design etc. on the basis of their experience in Switzerland, US, UK and other countries. Now the regulator / inspector has to decide which is suitable for the metros which is a very difficult.

40. Secretary(UD) in his concluding remarks thanks RDSO for organising the meeting of all the Metros at RDSO. He requested all the Managing Directors of Metro Railways to send their comments, remarks on Metro Act and other agenda items for further discussion. He proposed that the next meeting shall be held shortly to discuss the queries and remarks of different Metros on other agenda items. He also desired that the metros to share the good work being done by them. He also agreed that the biggest task in front of metro is to acquiring the land. He also thanks to Ministry of Railways for their cooperation for acquiring the land.

The meeting ended with vote of thanks to the chair.

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LIST OF PARTICIPANTS

Ministry of Urban Development
1. Dr. Sudhir Krishna, Secretary (UD) in Chair
2. Shri S.K. Lohia, OSD & Ex-Officio Joint Secretary (UT)
3. Shri Prakash Singh, Director (MRTS-I)
4. Shri I. C. Sharma, National Project Manager, PMU/SUTP
5. Shri Deen Dayal, Under Secretary (MRTS-Cooord)

Ministry of Railways
6. Shri A.P. Mishra, Member Engineering
7. Shri R. K. Bhatnagar, Adviser Electrical
8. Shri Rajiv Chaudhry, Executive Director (Works Planning)

Research Designs and Standards Organization (RDSO)
(Indian Railways)
9. Shri V. Ramachandran, DG, RDSO
10. Shri Prashant Kumar, CCRS
11. Shri V. K. Jain, ADG, RDSO
12. Shri Akhilesh Kumar Yadav, Director (Signal), RDSO
13. Shri Rajesh Kumar, Executive Director, UTHS, RDSO
14. Shri J. N. Lal, Sr. Executive Director (Traction Installation), RDSO
15. Shri Rajiv Vishnoi, Sr. Executive Director (Motive Power), RDSO
16. Shri P. Funkwal, Executive Director (Structures), RDSO
17. Shri Mahesh K. Gupta, Executive Director (B&S), RDSO
18. Shri Sonvir Singh, Executive Director (Track-I), RDSO
19. Shri B. S. Dohare, Executive Director (Testing), RDSO
20. Shri Pravin Pradhan, EDSE(C), RDSO
21. Shri Mahesh Kumar, Secretary to DG, RDSO

**Delhi Metro Rail Corporation**

22. Shri Satish Kumar, Director (EL)

**Jaipur Metro Rail Corporation**

23. Shri Ashwani Saxena, Commissioner RC UDH, GoR

**Kolkata Metro Rail Corporation**

24. Shri Subrata Gupta, MD

**Hyderabad Metro Rail Limited**

25. Shri N V S Reddy, MD

**Mumbai Metro Rail Corporation**

26. Shri S.V.R. Srinivas, MD
27. Shri P R K Murthy, Director

**Bangalore Metro Rail Corporation**

28. Shri N. Sivasailam, MD

**Chennai Metro Rail Limited**

29. Shri K. Rajaraman, MD

**Metro Railway, Kolkata**

30. Shri J. K. Verma, Chief Engineer

**Kochi Metro Rail Limited**

31. Shir Tom Jose, MD

**Rapid Metrorail Gurgaon Limited**

32. Shri Sanjiv Rai, MD

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