

**GOVERNMENT OF INDIA
URBAN DEVELOPMENT
LOK SABHA**

UNSTARRED QUESTION NO:2157
ANSWERED ON:06.08.2010
ACCIDENTS AT DMRC PROJECTS
Singh Chaudhary Lal

Will the Minister of URBAN DEVELOPMENT be pleased to state:

- (a) the details of mishaps/accidents occurred in Delhi Metro Rail Corporation (DMRC) projects during the last three years and as on date, incident-wise;
- (b) the number of persons killed, injured during the said period in such incidents alongwith the compensation paid/proposed to be paid to them, incident-wise;
- (c) the details of inquiries ordered into such incidents, the outcome thereof and the action taken/to be taken against the officials/company found responsible for such lapses;
- (d) whether the DMRC is following the safety norms established for the purpose;
- (e) if so, the details thereof; and
- (f) the safety measures taken/being taken to prevent recurrence of such incidents?

Answer

THE MINISTER OF STATE IN THE MINISTRY OF URBAN DEVELOPMENT (SHRI SAUGATA ROY)

(a) & (b): The details of mishaps/accidents occurred in Delhi Metro Rail Corporation (DMRC) projects during the last three years as on date and incident-wise as reported by DMRC in respect of the number of persons killed and injured along with the compensation paid, etc. are enclosed at Annexure-I and Annexure-II respectively.

(c): During the last three years there have been two major accidents for which special enquiries were ordered by DMRC for thorough investigation as under :-

(1) The first accident involving major failure at Launching site happened at M/s Afcons Infrastructure Ltd. site on 19.10.2008 at Laxmi Nagar. The inquiry revealed that the accident occurred due to mechanical failure of the launcher. The actions taken subsequent to the enquiry findings are as under :

(i) M/s Afcons Infrastructure Ltd. was debarred from quoting for any DMRC work for a period of one year.

(ii) The Project Manager and Launching Incharge of M/s Afcons Infrastructure Ltd. were demobilized from the contract.

(2) The second accident involving pier collapse at Zamrudpur happened at M/s Gammon India Ltd. site on 12-07-2009. The main findings of the High Level Enquiry Committee constituted for this purpose were as under:-

(i) Deficiency in the design of the cantilever arm.

(ii) Concrete not having adequate strength probably due to lack of adequate curing of the concrete.

The actions taken subsequent to enquiry finding are as under:-

i) M/s Arch Consultancy Services Pvt. Ltd. has been blacklisted for five years.

ii) M/s Tandon Consultants has been debarred from DMRC works for a period of two years.

iii) M/s Gammon India Ltd has been served a memorandum for black listing them for a period of two years.

iv) One Director, who was on deputation, was repatriated to Indian Railways.

v) Two Deputy Chief Engineers have been repatriated to their parent departments.

vi) One expatriate Quality Expert of General Consultants was demobilized.

(d): Yes, Madam.

(e): Safety norms being followed by DMRC in the construction of Delhi Metro for preventing accidents are governed by statutory laws like Delhi's Building and Other Construction Workers (DBOCW) Rules and Contractual provisions of DMRC Contract conditions on Safety, Health and Environment. The Contract Conditions and Manuals are based on Central and State laws concerning Safety and

Health. They refer extensively to Indian and International standards for Safety in Construction.

Ensuring the compliance of these statutory and contractual requirements at work sites is the responsibility of the contractor. The same is monitored by DMRC Site Engineers and Safety team from the corporate headquarters and the General Consultant's Safety experts. The philosophy and system adopted by DMRC for ensuring effective safety management in construction is based on a three tier approach. This involves Contractor's Organization wherein each contractor appoints and employs a team of qualified Safety Health and Environment (SHE) Professionals dedicated exclusively to safety duties. External SHE Audit is undertaken every three months (quarterly) for the full term of the contract. The audit is conducted against a comprehensive check list which is based on compliance to each point of the Contract condition on Safety. Lastly, Site Inspection by General Consultants Safety Experts is conducted and Observation Reports are prepared for the non conformances found at site, for which the contractor is directed to submit the compliance report to DMRC.

The outputs from all of the above auditing and inspection activities are recorded, tracked and performance monitored by DMRC. For each of the three layers of activity described above, where performance is seen to be lacking instructions are given for correction to be made.

(f): The Safety measures undertaken by DMRC to prevent the reoccurrence of launcher failure are as follows:-

(i) All the launchers at different sites were stopped and re-inspected jointly by Safety and Site teams. The work at these launchers resumed only after compliance of safety observations made during these inspections.

(ii) Safety Experts of General Consultants were tasked to carry out dedicated separate inspections of Launchers on regular basis and submit report of Safety issues at work sites.

(iii) Strengthening of site team for monitoring of works was carried out and launching operations were being supervised by competent supervision of Contractors as well as DMRC.

(iv) A comprehensive check list on safety was developed and circulated to all launching sites for completion before allowing any launching activity. The same is being monitored by Site Engineers.

Similarly safety measures taken to prevent reoccurrence of cantilever pier failure are as follows:

(i) DMRC undertook special drive to check all the cantilever piers so far constructed and their design rechecked by M/s Shirish Patel and Associates, a well known design consultant. Based on their advise, necessary action have been taken to ensure that all the cantilever piers are safe.

(ii) DMRC has also decided to get all the design checked in future by the General Consultant or by an outside consultant.

General measures under taken are as follows :-

(i) With a view to improve the overall safety at all DMRC worksites, a special drive was undertaken in July-August 2009 for special training of the workers and supervisors of all the contractors working at DMRC sites. All the construction companies were directed to arrange a Crash training programme of minimum three days duration or equivalent 18 hours of training exposure to all their employees working at site including sub-contractor workers. More than 25,000 workers were trained under the said special drive.

(ii) Safety awareness campaign has been initiated by organizing Safety Seminar which was attended by Site Engineers from DMRC and contractor side, Corporate Headquarter team and General Consultant Experts under the leadership of Managing Director.

(iii) Everyday Tool Box Talk at worksite highlighting the issues of safety during construction are being ensured to be conducted by the contractor team.