

Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways

Construction Safety in Railway Projects

Purpose

The construction of the five new railway projects, namely the West Island Line, South Island Line (East), Kwun Tong Line Extension, Hong Kong section of Guangzhou–Shenzhen–Hong Kong Express Rail Link and Shatin to Central Link, is in full swing. This paper aims at introducing the approach and the implementation of safety management by the MTR Corporation Limited (“MTRCL”) during the delivery of these new railway projects.

Safety Philosophy

2. Safety is of paramount importance to MTRCL. It is committed to ensuring the safety of the public, contractors and staff. With competent and experienced contractors, we foster our “safety first” culture, implement international safety standards and practices on their sites, comply with all statutory requirements throughout their work, improve labour welfare and achieve continuous improvement of safety and health in their workplace.

3. The MTRCL’s requirements and safety-first culture are communicated to the contractors and other partners during the project delivery through various channels such as safety inspections, meetings, workshops, large scale safety conferences and safety campaigns. MTRCL also assists and guides

contractors to achieve the safety goals and requirements. Projects Director and senior managers of MTRCL regularly meet the contractors' head to discuss performance and improvements to safety standards.

4. Contractors' senior managers, line managers and supervisory staff are responsible for fostering the "safety first" culture and for implementing Safety Management System throughout their areas of responsibility. They ensure that safety, occupational health, loss prevention and welfare considerations are always given priority in design, planning, supervision, training, allocation of manpower, provision of equipment and day-to-day work practices.

Safety Management

5. MTRCL is committed to maintaining a "safety-first" culture and employs internationally recognized Safety Management System to oversee all organizations, teams and staff that participate in the railway projects, including the MTRCL, contractors, subcontractors, suppliers, and staff and visitors that enter the sites.

6. While achieving the basic statutory safety requirements throughout the process of tendering, confirming method statements and works implementation in delivering the new railway projects, MTRCL will also comply with the international safety standard as well as International Standard Organization standards in occupational health and safety, quality management and sustainable development. Having established the goal in putting safety as the highest priority, MTRCL also requests contractors to execute it effectively and precisely.

Stage of tendering and implementation of method statements

7. In the process of tendering, MTRCL will review thoroughly on all the tenders received. Safety performance and safety competency, as well as resources allocated to safety are critical criteria for tender assessment on short listed tenderers.

8. A critical element of the MTRCL's safety management system is to ensure that detailed method statements and risk assessments are produced by the contractors and implemented on site. MTRCL's site engineers are tasked to review the method statement submitted by contractors and inspect the works to ensure full compliance with all statutory requirements and the agreed method of work and risk assessment.

Works Implementation Period

9. During works implementation, MTRCL's Projects Safety Management Committee oversees the implementation of safety management system by the contractors of railway projects and reviews their performance. The Projects Safety Management Committee is chaired by MTRCL's Projects Director with senior management staff from all projects. MTRCL's construction managers hold regular meetings with the contractors to review their safety performance and the effectiveness of preventive and corrective measures on safety.

10. Tunneling works entails peculiar risks to workers by virtue of its confined nature. Therefore, contractors are required to comply with stringent safety legislation, contractual safety requirement as well as

international standards stipulated in BS6164, Code of Practice on Health and Safety in Tunneling in the Construction Industry. These include control of entry of personnel and vehicles, maintenance of fire escapes and fire services equipment, regular evacuation drills, provision of self-rescuers and continuous monitoring of tunnel atmosphere. Supervisory staff of MTRCL will carry out daily site inspection at tunnels to ensure the safety standard is complying with the above requirements.

Safety Inspection and Audit

11. MTRCL and the contractors have put in a lot of efforts and resources to ensure site safety and to provide a safe working environment. Safety inspections are conducted daily and weekly. Whenever any unsafe practice is observed, relevant works at the location concerned will be stopped by the safety staff of MTRCL and remedial measures should be applied and accepted by MTRCL to resume relevant works.

12. Various incentives have been adopted to recognize contractors' effort and to encourage continuous improvement, including payment based on safety audit, the bi-annual Quality, Safety, Environmental and Stakeholder Engagement Awards, etc. The monthly site inspection carried out by safety staff of MTRCL has also become an element of the safety incentive scheme, at which contractors who achieve high site safety standards will be awarded.

13. The MTRCL's Insurers employ an internationally recognized auditor to conduct safety audits on all major contractors every 6 months. The scores achieved by the contractors are benchmarked against other contractors and companies worldwide and the auditors advised that the safety standard of MTRCL projects is comparable with international standards.

14. Regular site drills are conducted by MTRCL together with the contractors to test and to ensure that all emergencies can be handled in effective and proper manner and well prepared by the project team.

15. Contractors will investigate all accidents internally and produce investigation and improvement reports to MTRCL. MTRCL will also appoint a General Manager or Project Manager to chair an independent inquiry panel for fatal and serious accidents for reporting to the Projects Safety Management Committee, and lessons learnt from accidents will be shared amongst all staff and contractors. For example, with the experience received from falling from height incidents, training has been enhanced to both MTRCL and contractor staff for raising the workers' safety awareness of working at height, and relevant safety measures have been implemented.

16. Moreover, MTRCL is the first project owner in Hong Kong to offer free life insurance scheme for workers which provides an additional safety net for workers and is well-received by contractors and workers.

Occupational Health

17. MTRCL is also concerned about the high risk activities in Hong Kong with hot and humid weather in summer. As such, contractors are required to employ measures aimed at heat stress prevention to improve the working environment. MTRCL is the first employer in Hong Kong to provide free rehydration drinks to workers during the summer months.

18. A dedicated site clinic, under the management of a full time registered

nurse, is provided on every major contract, while free medical checks for workers across 29 sites was arranged by MTRCL during the “Worker Health and Well-being Month” in 2013.

19. While works are conducted in confined environment to construct the railway tunnels, a safe and healthy work environment is being maintained by MTRCL and contractors through various measures. Appropriate lighting and ventilation systems are installed while workers are provided with appropriate personal protective equipment when working inside the tunnels. Workers who are required to work underground or under compressed air receive comprehensive medical checks by a medical practitioner to ensure their fitness prior to work commencement and annually thereafter. A decompression chamber is provided in all tunnel boring machines which is managed by a specialist who ensures workers undergo decompression according to approved criteria to prevent decompression sickness.

Safety Training and Awareness

20. All supervisory staff of MTRCL is required to attend a 30-hour in-house construction safety training course to ensure their competency in monitoring contractors’ safety performance. About 1,100 supervisory staff has attended the course since 2009. Apart from the statutory qualifications, MTRCL also requires the safety staff of contractors to have rich working experience. For example, a safety manager is required to have at least 5 years relevant working experience, a registered safety officer is required to have 3 years relevant working experience, and a site nurse is required to have 2 years relevant working experience.

21. MTRCL requires all levels of contractors' staff to attend safety training courses. MTRCL provides contractors' Safety Officers and Safety Supervisors with practical training to enhance their skills to implement safety requirements on railway construction sites. At the same time, induction courses are provided to contractors' Safety Training Officers to enhance their understanding of the MTRCL's safety requirements on railway construction for ensuring that the site induction courses provided by them cover essential safety information.

22. Contractors hold briefings and health exercises with all frontline site workers every morning before commencement of works to remind them of safety issues. To cater for the needs of the workers of different nationalities, particularly workers of ethnic minority, six languages are used in delivering the safety messages, which include Chinese, English, Nepali, Tagalog, Hindi and Urdu.

23. MTRCL has organized various campaigns to raise and promote the safety awareness of the workers with the contractor:

- Near Miss Reporting Scheme since 2009 for accident prevention.
- iSafe campaign since 2010 to remind workers on their own safety.
- "Don't Walk By" campaign since 2011 to encourage workers to report any unsafe acts or working environment.
- A New Worker Caring Program to assist new and inexperienced workers in familiarizing themselves with the site safety requirements and standards and through mentorship.
- Communication through conferences and workshops, and newsletters.

Safety Performance

24. The number of worksites and workers has increased significantly since the commencement of the first project (West Island Line) in 2009. Up to November 2013, there are about 12,700 workers employed on about 180 worksites under the five on-going railway projects.

25. From January to November 2013, there have been 259 reportableⁱ accidents with the majority being minor cases involving injury to finger, foot and back. The year-to-date accident rate per thousand workers for the five new railway projects stands at 14.06 as at November 2013, as compared to the figure of 44.3 for the construction industry in Hong Kong for 2012. There are four fatal cases from commencement of works in 2009 to November 2013. MTRCL will continue to enhance the safety management of railway sites, to enhance the safety awareness of workers and to ensure that safety is put in the first priority during works implementation.

Conclusion

26. Safety is an absolute prerequisite for MTRCL and its contractors in constructing the new railway projects. Over the years, MTRCL has developed a sound and comprehensive safety management system endorsed by internationally recognized auditor and accredited to internationally recognized Occupational Safety and Health Management System. With the commencement of large scaled railway projects, MTRCL has implemented numerous different initiatives to foster a safety culture, improve welfare and

raise the safety standards by adopting best international safety practices. MTRCL will continue to promote a safety-first culture and maintain a safe working environment, and shall make every effort to ensure that contractors place the safety of the public and staff as the highest priority.

MTR Corporation Limited

December 2013

ⁱ Reportable Accidents refer to injury cases arising from work accidents, resulting in death or incapacity for work of over three days under the Employees' Compensation Ordinance.