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16 April 2014

Secretary General
Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong
(Attn: Ms Sophie LAU)

Dear Ms LAU,

Safety standard of trains of the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL)

Thank you for your letter of 20 March 2014 to the Transport and Housing Bureau. Regarding the Hon. Gary Fan Kwok-wai's enquiry on the captioned matter, our consolidated reply is set out below.

Railway safety has always been our top priority in taking forward the XRL project. The regulation of various aspects of railway safety in Hong Kong is based on relevant international standards, including EN15227 (the European Union standard on crashworthiness for trains) or equivalent safety standards. MTR Corporation Limited ("MTRCL") is required to submit information to the Electrical and Mechanical Services Department ("EMSD") to prove that when the train is operating in actual conditions, its safety performance can achieve the safety level of international standards. The trains of the Hong Kong section of XRL are manufactured by CSR Qingdao Sifang Co. Ltd. MTRCL has been

supervising closely the design and manufacturing process of the trains and signalling system; and has introduced monitoring measures and independent expert assessments throughout the various processes so as to ensure compliance with international safety standards and Mainland railway safety requirements.

MTRCL has been entrusted by the Government to implement the Hong Kong section of the XRL. The procurement contract of XRL rolling stock followed an open and fair tendering process complying with the relevant requirements of the World Trade Organisation. The tender assessment board will examine all tenders taking into account their relevant experience, capability and past performance amongst other criteria.

According to MTRCL, the tenderers advised that rolling stock complying with EN15227 were not available at the time of the international open tender process. The high speed rail networks in Europe are operated by different countries and many sections are running at mixed traffic mode, i.e. passenger trains will use the same tracks as freight trains, with many level crossings with road traffic. Certain railway sections are operating without signalling system, and the operating risk is higher. This operation regime is different from the XRL, which will run on dedicated corridor. MTRCL assessed that the requirements of EN15227 would be more applicable to the European railway model. Taking account of the future operational requirements and technical risks, MTRCL viewed that the XRL should opt for well-proven rolling stock readily available in the market.

According to MTRCL, the structural integrity of XRL train is designed to meet the European EN12663 standard to ensure the structural strength of the train body and its resilience. The coupler of the XRL train comprises anti-climbing feature including climb prevention and energy absorbing device and is of the same model of that of the CRH3 train. The design of the structural integrity of XRL train complies with the Mainland and international standards ensuring the operational safety of trains.

We stress that while the operational safety of XRL trains relies on the structural integrity of the trains, the signalling system is even more

important in ensuring that the trains will operate integrally with other railway operating systems. The XRL system is equipped with a proven signalling system. The signalling system will monitor the location, operating speed and other operation parameters of high speed trains in the Hong Kong section of the XRL on a real time basis, to ensure trains are kept at safe distance. The signalling system is also equipped with the Automatic Train Protection function. If the train is over speed or running too close together, the signalling system will issue warning to the driver and stop the train if necessary. The signalling system of the Hong Kong section of the XRL is designed in accordance with the fail-safe principle under which the train will be automatically stopped if there is fault in railway equipment or system so as to ensure safety.

To ensure safe operation and to achieve seamless connection with the Mainland high speed rail network, the signalling system of the XRL should comply with the Chinese Train Control System ("CTCS") specifications, which was developed based on the European Train Control System ("ETCS") specifications with equivalent safety requirements. The XRL adopts a dual CTCS-3 and CTCS-2 signalling system, thus providing multiple layers of safety protection.

Prior to the opening of the Hong Kong section of the XRL, MTRCL will conduct integrated testing and trial run for the entire Hong Kong Section of XRL to ensure the overall reliability and operational safety before the XRL is put into service. New trains will also have to pass multiple testing, including factory acceptance test, system integration test and on-site test, to ensure that the trains have achieved the required safety level in accordance with international standards. EMSD will assess the test reports submitted by MTRCL and take part in the on-site test in Hong Kong before approving the operation of the new trains.

Yours sincerely,

(Jackson SIN)
for Secretary for Transport and Housing

c.c.

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