CONTROLLING OFFICER'S REPLY

(Question Serial No. 0908)

Head: (60) Highways Department

Subhead (No. & title): (-) Not Specified

Programme: (3) Railway Development

Controlling Officer: Director of Highways (YAU Kwok-ting)

Director of Bureau: Secretary for Transport and Logistics

Question:

Regarding the application of the Hong Kong Railway Standards in the MTR Northern Link (NOL) Project and the Hong Kong-Shenzhen Western Rail Link (Hung Shui Kiu-Qianhai) Project, will the Government advise this Committee on the following:

(1) What are the (i) latest cost estimates, (ii) estimated amount and percentages of savings, (iii) main aspects that contributed the savings (such as civil, electrical and mechanical, signalling, station design, procurement, works acceptance tests, etc.) before and after adopting the Hong Kong Railway Standards for the NOL, the Hong Kong-Shenzhen Western Rail Link (Hung Shui Kiu-Qianhai), and other new railway projects proposed to adopt the said standard? Please also reply in form of table by project.

(2) Regarding the NOL Spur Line, what are the (i) respective original and latest schedules (design, tendering, construction commencement, testing and commissioning), (ii) specific measures and key assumptions for expediting the works, and (iii) target date for simultaneous commissioning with the Main Line and risk assessments (including approval procedures, land resumptions, cross-boundary coordination, market supply of contractors and coordinating risks between contractors)?

(3) How can the Government ensure that railway safety, quality and performance are not affected while introducing suitable standards from the Chinese Mainland and overseas for local adaptation? These include (i) which departments/independent organisations are responsible for the approval, certification and supervision, (ii) whether third-party safety assessments and auditing mechanisms are in place, and (iii) whether there are irreducible baseline requirements and acceptance standards for key systems (such as signalling, power supply, ventilation and fire safety, evacuation, cybersecurity, etc.).

Asked by: Hon BOK Kwok-ming, Aaron (LegCo internal reference no.: 28)

Reply:

(1) The new Hong Kong Railway Standards promulgated by the Highways Department (HyD) facilitate the use of a broader selection of advanced construction technologies,

construction materials, equipment and railway systems for new railway projects according to individual project circumstances and needs, provide clear technical specifications as the approval basis by the supervisory authorities, and also facilitate the development and optimisation of work processes by the industry, driving the new railway projects of Hong Kong with enhanced speed and efficiency. In particular, the Hong Kong Railway Standards encourage the adoption of innovative construction machinery, technologies and materials (such as larger-scale or wider scale of standardised modular integrated construction, high-strength steel, and ultra-high-performance concrete), as well as advanced equipment and construction specifications (such as the selection, design, construction and control of tunnel boring machines). The cost savings for individual projects will vary depending on actual circumstances including the nature, scale and site condition of the project.

The Hong Kong Railway Standards will first be applied to the Northern Link (NOL) project and the Hong Kong - Shenzhen Western Rail Link (Hung Shui Kiu – Qianhai)(HSWRL), and will be extended to other new railway projects in the future. Regarding the NOL project, the Government is currently reviewing the project estimate provided by the MTRCL. Based on our rough estimation, the adoption of the Hong Kong Railway Standards, coupled with the synergies generated by implementing the NOL Main Line and the NOL Spur Line together, the construction cost is expected to be reduced by about 20% for the NOL project. Moreover, the programme of the NOL Spur Line could be advanced by 2 years, enabling it to be commissioned together with the NOL Main Line by 2034 or earlier. Regarding the Hong Kong section of HSWRL, the investigation and design works have already commenced. We are currently carrying out the design and relevant site investigation works, statutory procedures, financial assessments, etc. During this process, the construction cost of the Hong Kong section of the project will be estimated, realising the benefits of adopting the Hong Kong Railway Standards.

(2) The Government signed the project agreement for Part 1 of NOL project with the MTR Corporation Limited ("MTRCL") in July last year, taking forward the NOL project through a holistic planning and phased implementation strategy, the NOL Spur Line and the NOL Main Line are being taken forward together as one project. The works that are more ready and time-critical are given priority to commence first, while the detailed planning and design as well as statutory procedures for the NOL Spur Line are carried out in parallel. As mentioned above, based on our rough estimation, the adoption of the Hong Kong Railway Standards, coupled with the synergies generated by implementing the NOL Main Line and Spur Line together, the programme of NOL Spur Line will be advanced by two years, allowing it to be commissioned together with the NOL Main Line by 2034 or earlier.

The MTRCL is currently carrying out the detailed planning and design for the NOL Spur Line, including statutory procedures such as environmental impact assessment and railway scheme gazettal. Once the relevant works are substantially completed, the Government and the MTRCL will promptly sign the project agreement for Part 2 of the NOL project to finalise the remaining works and operational arrangements. The timing of key milestones prior to commissioning will be specified in the project agreement. The MTRCL will be required to submit an overall master plan in the project agreement for the Government's monitoring and control of project progress. The MTRCL is also

required to submit risk assessments on the aspects of safety, quality, programme, etc. regularly, and proactively report any major issues/incidents to the Government and make early warnings, and promptly take necessary follow-up actions.

(3) As emphasised in the guidelines of the Hong Kong Railway Standards, the standards have retained the prevailing railway standards in Hong Kong while also introduced suitable railway standards from Chinese Mainland and other parts of the world with adaptation to the local circumstances, as a result of detailed analysis and comparisons on the premise of ensuring railway safety, quality, and performance-based outcomes. The relevant guidelines also indicate that one of the principles of the Hong Kong Railway Standards is to comply with Hong Kong legislation and statutory requirements, including the Buildings Ordinance (Cap. 123), the Fire Services Ordinance (Cap. 95), the Electricity Ordinance (Cap. 406), the Environmental Impact Assessment Ordinance (Cap. 499), etc.

The HyD established the Railway Checking Unit (RCU) by reallocating internal resources to effectively implement the Hong Kong Railway Standards. This dedicated unit is responsible for handling the approval building plans of new railway projects. The RCU is under the Headquarters of the HyD and works separately from teams implementing railway projects (i.e. the Railway Development Office and Northern Metropolis Railway Office) in order to maintain its independence. The RCU will collaborate with relevant departments, including the Electrical and Mechanical Services Department (EMSD), to ensure that building plans meet the requirements for the safe operation of future buildings and railway systems. The standards, design, approval, site supervision, quality, site safety, etc. of the works are subject to the control of the Buildings Ordinance (Cap. 123), which requires to appoint building professionals (including authorised persons, registered engineers and registered geotechnical engineers) and registered contractors (including general building contractors or specialist contractors) to take up the responsibilities and duties under the Buildings Ordinance including obtaining approval and consent for the works.

Besides, the EMSD will implement the Project Safety Review (PSR) process for new railway projects, which involves conducting systematic assessments of long-term operational safety of new railway projects during various stages of projects, such as design, construction, installation, testing, etc. The aim is to identify potential safety hazards in major buildings and electrical and mechanical equipment at an early stage and provide comments, enabling timely follow-up actions by engineering teams and ensuring the long-term operational safety. Before the commissioning of new railway projects, relevant government departments (including the EMSD, Transport Department, Fire Services Department, etc.) must also conduct the "safe and sound" assessment, undergoing a series of rigorous inspections and verification procedures to ensure that the newly constructed railway system is safe and reliable before it can be commissioned.

- End -