

ITEM FOR ESTABLISHMENT SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 42 – ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT

Subhead 000 Operational expenses

Members are invited to recommend to the Finance Committee the creation of the following permanent directorate posts in the Electrical and Mechanical Services Department upon approval by the Finance Committee –

1 Chief Electrical and Mechanical Engineer
(D1) (\$150,950 - \$165,200)

1 Chief Electronics Engineer
(D1) (\$150,950 - \$165,200)

PROBLEM

Additional directorate officers responsible for co-ordinating and guiding the work of the Railways Branch of the Electrical and Mechanical Services Department (EMSD) are needed to strengthen the regulation on the safety of railway services through an enhanced, more proactive and comprehensive monitoring regime.

PROPOSAL

2. We propose to create the following two permanent posts in the Railways Branch of EMSD (the Railways Branch) upon approval by the Finance Committee to strengthen the regulation on the safety of railway services through a proactive and comprehensive monitoring regime –

- (a) one Chief Electrical and Mechanical Engineer (CEME) (D1) post;
and
- (b) one Chief Electronics Engineer (CEE) (D1) post.

JUSTIFICATION

Railway safety and rising public expectation

3. Railway is the backbone of the public transport system in Hong Kong. The daily patronage of railway lines operated by the Mass Transit Railway Corporation Limited (the MTRCL) has increased by approximately 28% from 4 million in 2008 (when the Railways Branch was established¹) to over 5.1 million in 2019, accounting for 41% of the total patronage of Hong Kong's public transportation. As railway services are closely related to the daily living of the public and any railway service disruption will cause inconvenience to the public, a safe, reliable and efficient railway operation is therefore of paramount importance. The public has very high expectation on the railway services provided by the MTRCL. In order to reduce the occurrence of railway incidents (such as power supply failure, train fault, rail crack and signalling system failure), the MTRCL must continue to improve its repair and management programme, and the Government also continues to enhance its regulation to oversee MTRCL's works in this regard.

4. The first underground railway line started operation in 1979 with subsequent expansion over the years to the existing railway network of over 263 km². The stations and facilities were designed based on industry standards adopted at the time of construction. With an increasing railway patronage and expanding network, the railway facilities have been heavily loaded. Moreover, part of the existing railways and related facilities are entering their replacement age³, requiring large-scale replacement, retrofitting, maintenance and repair works by the MTRCL in phases. Although some equipment and systems may have been upgraded or renewed throughout the years, for individual lines and related facilities which are to be replaced, especially those built in the early years, the MTRCL needs to put in more resources and effort in order to maintain a high level of safety standard against the high utilisation at present.

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¹ Established in 2008, the Railways Branch took over the work of the then Hong Kong Railway Inspectorate on railway safety regulation from the Transport and Housing Bureau.

² Total track length is around 759 km.

³ The general service life of railway facilities is – (a) about 30-40 years for rolling stock; (b) about 20-30 years for signalling system; and (c) about 25-40 years for power distribution system.

5. In order to ensure that the MTRCL provides safe and reliable services, the Government has put in place a stringent regulatory system, whereby the Railways Branch regulates and oversees the safe operation of the railway systems, and investigates railway incidents in accordance with the Mass Transit Railway Ordinance (Cap. 556) and the Mass Transit Railway Regulations (Cap. 556A). Major functions of the Railways Branch include ensuring the adoption of appropriate safety measures by the MTRCL; assessing and vetting major modifications of existing railway facilities and the implementation of new railway projects; evaluating and following up on the improvement measures taken by the MTRCL in respect of railway safety.

6. To address the public expectation on railway safety, the expanding railway network, ageing legacy infrastructure and an increasing number of passengers which leads to a heavily loaded railway system, the Government considers that a more proactive and comprehensive monitoring regime should be adopted to enhance the safety of railway system, lower the risk of occurrence of railway incidents and reduce the number of system failures. The Railways Branch will step up its regulation over the MTRCL. In addition to the current risk-based approach, the Railways Branch will adopt a more proactive, preventive and major railway system-based (including signalling system, rolling stock, tracks and power supply system) monitoring regime, and carry out more comprehensive and direct audits on the MTRCL's asset management system (AMS) and safety management system (SMS) in order to identify early the potential problems of the railway system and possible causes of incidents to ensure railway safety.

Increased train frequency and an expanding railway network

7. The 2019 daily patronage of railway lines operated by MTRCL was over 5.1 million passenger trips per day. In view of the rising number of passengers, the MTRCL has been increasing its train frequency since 2008. The total number of train trips of its heavy rail system has increased from around 1.69 million in 2008 to around 2.08 million in 2019, representing an increase of about 23%.

8. Apart from the increase in train frequency, the railway network has been expanding since 2008, including the West Island Line which commenced service in March 2015, the Kwun Tong Line Extension in October 2016, the South Island Line in December 2016, the Guangzhou-Shenzhen-Hong Kong High Speed Rail (Hong Kong Section) in September 2018, and Tuen Ma Line Phase 1 in February 2020. This has resulted in a significant increase in the relevant monitoring work. Specifically, the Railways Branch has to continue to strengthen

/its

its routine railway regulatory work, such as participating in and monitoring sample daily tests and maintenance work conducted on-site by the MTRCL, so as to effectively monitor the safety performance of these railway projects.

9. Against the increase in train frequency and the implementation and commissioning of new railway projects (including the Automated People Mover (APM) system of the Three-Runway System (3RS)), the regulatory work of the Railways Branch will increase significantly. The Railways Branch has to work together with other government departments (including Buildings Department, Highways Department, Fire Services Department and the Hong Kong Police Force) to vet the proposals and plans submitted by the MTRCL, conduct on-site tests and grant approval for various railway systems that are related to railway safety (including signalling systems, rolling stock, tracks, power supply system, station facilities and control systems, communications equipment and other contingency systems), scrutinise the contingency plans for emergencies prepared by the MTRCL, and monitor the drills for simulated emergency incidents conducted by the MTRCL. The co-ordination and liaison work involved, including the support work for various railway projects, convening of regular and ad hoc meetings, etc. has increased very significantly.

Stable trend of railway incidents, yet huge potential impact

10. As the railway network of the MTRCL has been expanding with an increasing patronage, any railway incident resulting in railway service disruption may cause considerable disturbance to passengers. Hence, it is of utmost importance to strengthen the safety and reliability of railway services in order to reduce the occurrence of incidents.

11. The overall number of incidents in the MTRCL's railway network caused by equipment failure and resulting in service disruption of eight minutes or above has remained stable in the past ten years (the figures are set out in

Encl. 1

Enclosure 1). That said, some relatively more serious railway incidents happened

/recently

recently⁴ have aroused wide public concerns. Such incidents had caused service delays in relevant stations or railway lines, or even led to service suspension of a few connected lines. The impact is very serious and widespread, not only bringing inconvenience to passengers but also affecting economic activities at large. Among them, for the derailment incident near Hung Hom Station of the East Rail Line on 17 September 2019, the MTRCL has set up an investigation panel to conduct a thorough investigation and propose recommendations. The Railways Branch has also commissioned independent local and overseas experts to assist in our independent investigation. The relevant investigations have been completed and the reports have been released in early March. We plan to brief the Legislative Council (LegCo) on the investigation findings in May.

12. The Government understands that the public has high expectation on railway services. As the statutory regulatory authority of railway safety, the Railways Branch considers it necessary to adopt a more comprehensive, preventive and system-based approach to enhance its inspection and monitoring of railway safety. This aims to uncover the hidden problems of the railway system early in order to avoid the occurrence of incidents. Conducting comprehensive audits can also facilitate early implementation of preventive maintenance and replacement work, which is more cost effective. There is thus an imminent need to strengthen the manpower of the Railways Branch.

Major asset replacement projects and other related railway projects

13. In recent years, the MTRCL has reviewed the condition and performance of its major railway assets in order to ascertain their continual performance and facilitate the planning of asset replacement projects. As a result, several major asset replacement and modification projects have been identified and commissioned, including the replacement of 154 air-cooled chillers from 2017 to 2023, upgrading of the signalling system of seven Mass Transit Railway (MTR) urban lines from 2019, as well as replacement of power supply systems in urban lines from 2020 onwards. The Railways Branch will monitor and review the progress of the above major replacement projects to ensure that the efficiency and safety of railways will not be undermined during the system upgrading works.

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⁴ Incidents which led to relatively more serious railway service disruption in recent years include –

- The train hitting a trackside concrete block incident at Lai King Station of the Tsuen Wan Line on 6 October 2019
- The train derailment incident near Hung Hom Station of the East Rail Line on 17 September 2019
- The Tung Chung Line/Airport Express Line overhead line failure incident on 24 March 2019
- The train collision incident during the new signalling system testing on the Tsuen Wan Line on 18 March 2019
- The signalling system failure incident of four railway lines on 16 October 2018

14. Railways Branch is also responsible for the safety regulation of other related railway projects such as the new APM system of 3RS Project of the Airport Authority Hong Kong (AAHK). The new APM system will connect the existing Terminal 2 with the new Third Runway Concourse. The project includes installation of a new guideway system and modifications of the existing APM Lines and SkyPier Line. During the testing stage, the Railways Branch will strictly perform its gatekeeping role as the regulator. Besides requesting the AAHK to provide safety certificates issued by its contractors at every important stage to confirm the safety of the systems before conducting testing, the Railways Branch will participate in and monitor sample safety tests conducted on-site to ensure effective monitoring of the safety performance of APM system of 3RS. The relevant modification works will be completed in phases from 2020 to 2024. Similar work shall be taken up by the Railways Branch in performing its gatekeeping role as the regulator, and in monitoring the safety tests conducted by the MTRCL as regards to other railway projects.

Proactive and comprehensive audits on the MTRCL's AMS and SMS

15. The MTRCL's railway system is huge, involving a large amount of equipment, hundreds of thousands of mechanical parts and the support of over 10 000 maintenance staff. The MTRCL needs to continuously maintain its AMS for the effective management and sound operation of its railway assets. The MTRCL is also required to operate and maintain its SMS to review, control and minimise safety risks as far as practicable. The previous audit work of the Railways Branch focused on whether the MTRCL implemented its work according to the requirements of AMS and SMS (i.e. 'compliance audit'). It mainly conducts sample site inspection of the maintenance procedures and records of safety critical items of the railway system, as well as regular compliance audits to check whether AMS and SMS meet the procedural requirements under the incident-based and risk-based approach.

16. In the light of the expanding railway network, replacement of earlier-built equipment, and the possible impacts of railway incidents, the Railways Branch will strengthen its regulatory role in monitoring the MTRCL's operation and railway safety on top of its all along audit work. The newly expanded audit work will adopt a more direct, comprehensive and preventive approach. The Railways Branch will expand its audit work before the occurrence of incidents in reviewing whether the system itself is appropriate and is effectively implemented in order to identify early the potential problems of the railway system and possible causes of incidents to ensure railway safety. The Railways Branch will expand the

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scope of spot checks and direct inspection to conduct in-depth review of the maintenance procedures and records and the overall management system of each major part of the railway system, including the mode of management, maintenance status of railway projects, etc. and propose improvements for the MTRCL to follow up.

17. The entire expanded audit work will cover a total of 12 existing railway lines, including an audit for each major system (five in total, including signalling system, tracks, power supply system, rolling stock and SMS) of each railway line, amounting to a total of 60 audits. As each audit will take three months (adding up to 180 months in total) and there are currently three audit teams in the Railways Branch, it is estimated to take five years to conduct a periodic audit for all systems of various railway lines. The newly expanded audit work is an on-going work which needs to be conducted continuously in the long run to ensure railway safety.

Need to strengthen manpower at the directorate level

18. The workload of the Railways Branch, which is responsible for regulating and monitoring the operation of MTR, tramway, peak tramway and APM system at the Hong Kong International Airport, is very heavy. Currently, the Railways Branch is led by the Assistant Director/Railways (AD/R), ranked at Government Electrical and Mechanical Engineer (D2), and supported by two Chief Engineers (D1). At present, the two existing Chief Engineers are handling the above additional regulatory work proposed to be taken up by the proposed CEME and CEE posts on top of their regular duties on a short term basis. As the regular workload of the two Chief Engineers is already very heavy, they cannot absorb the additional regulatory workload on a long term basis.

19. Comparing the railway monitoring regime of Hong Kong with that of overseas regulators, the existing manpower ratio of the Railways Branch (every one billion passenger per unit) is much lower than that in the United Kingdom and Singapore (see the table below for details).

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	United Kingdom (2018)	Singapore (2018)	Railways Branch (Hong Kong) (establishment in 2018)	Railways Branch (Hong Kong) (proposed establishment)
Number of railway safety staff (A)	105	57	36	52*
Passenger trips of railway services (billion) (B)	3.256	1.278	1.985	1.985
Railway safety staff per one billion passenger trip $C = A \div B$	32.25	44.60	18.14	26.20

* At present, there are a total of 50 professional grades staff. Two directorate posts are proposed in this exercise.

20. As such, the Government considers that there is an urgent need to strengthen the manpower of the Railways Branch to undertake the necessary supervisory work and provide professional advice from a holistic and macro perspective regarding the monitoring of railway safety, including reviewing the mechanism of the Railways Branch for monitoring railway safety and relevant railway projects of the MTRCL, supervising the daily work of professional and technical support staff, as well as briefing LegCo, the media and the public as and when necessary.

21. Upon creation of the two permanent directorate posts, the officers concerned are expected to supervise about 110 inspections per year in relation to the newly expanded audit work, new railway and major asset replacement projects, which are on top of the existing inspections concerning the existing compliance audits and upon the occurrence of incidents conducted by the existing manpower of the Railways Branch. EMSD estimates that the total number of railway safety inspections will be around 390 in 2020. With the commencement of new railway and major asset replacement projects in the pipeline, the number of railway safety inspections will further increase. In view of the importance and complexity of the railway systems, and the public's concern and expectation on the safety and reliability of railway services, we have to ensure that such high-level duties are undertaken by full-time directorate officers with sound professional knowledge, extensive experience in public administration and well-tested leadership quality.

/Officers

Officers undertaking the posts are also required to liaise with stakeholders of different backgrounds from policy bureaux/departments, the MTRCL and other public transport companies, etc. Therefore, we propose that one permanent CEME post (D1) and one permanent CEE post (D1) be created in the Railways Branch to serve as Chief Engineer/Railways 3 (CE/R3) and Chief Engineer/Railways 4 (CE/R4) respectively.

22. The two proposed Chief Engineers and the two existing Chief Engineers will be responsible for different regulatory work. The two existing Chief Engineers are responsible for the safe operation of all existing railway lines (including the safe operation and safety regulation of the entire MTRCL railway lines), tramway, peak tramway and APM system at the Hong Kong International Airport). The two proposed Chief Engineers (CE/R3 and CE/R4) will be mainly responsible for the comprehensive audits of AMS and SMS of the MTRCL's entire railway system, monitoring the MTRCL's major asset replacement projects and regulating the safety of other related railway projects, including APM system of 3RS, etc. The job descriptions of the two proposed directorate posts (CE/R3 and CE/R4) are set out in Enclosure 2. The revised job descriptions of the existing two Chief Engineers (Chief Engineer/Railways 1 and Chief Engineer/Railways 2) are set out in Enclosure 3.
- Encl. 2
- Encl. 3

23. As mentioned above, the 2019 daily patronage of railway lines operated by MTRCL was over 5.1 million passenger trips per day, accounting for 41% of the total patronage of Hong Kong's public transportation. As such, occurrence of any railway incidents will have a wide impact, not only bringing inconvenience to passengers, but also indirectly affecting the overall productivity of the society. Although there is no regulatory system that can prevent all railway incidents from happening, having reviewed railway incident records in the past, it is believed that the new regulatory approach can more effectively and comprehensively review the entire AMS and SMS of the MTRCL. The proposed new CEME and CEE posts can ensure an effective implementation of the relevant audit work, thereby avoiding the occurrence of railway incidents and reducing its impact on the public and the overall society and economy.

24. Upon creation of the two directorate posts, AD/R, as the head of the Railways Branch, will continue to be responsible for the overall supervisory work. He/She will have the capacity to monitor the safe operation of railways, tramway, peak tramway and APM system at the Hong Kong International Airport from a macro and strategic perspective, as well as maintain close liaison with the management of the MTRCL, management officers of the Mainland's railway

/regulator

regulator and operator as well as experienced overseas railway regulators, so as to ensure that the Government's monitoring work can be effectively carried out and is on a par with international standards.

NON-DIRECTORATE SUPPORT

25. The two proposed directorate posts will need to be supported by 18 additional non-directorate permanent posts of professional and general grades to strengthen the inspection and monitoring capacity of the expanding railway services. As such works need to be carried out continually to monitor railway safety, the additional manpower is also on permanent establishment. The proposed organisation chart of the Railways Branch is at Enclosure 4.

Encl. 4

ALTERNATIVES CONSIDERED

26. We have critically examined the feasibility of sharing the duties of the two proposed directorate posts amongst the incumbent officers of the same rank in EMSD's Regulatory Services arm. As the current workload of these officers is already very heavy, they do not have any spare capacity to further absorb the additional workload of the proposed CEME and CEE posts regarding the enhanced railway regulatory regime, comprehensive audits of the MTRCL's AMS and SMS, monitoring of the major asset replacement projects, etc. The current organisation chart of EMSD's Regulatory Services arm and the duties of its Chief Engineers are

Encls. 5 & 6 set out in Enclosures 5 and 6 respectively.

FINANCIAL IMPLICATIONS

27. The proposed creation of one CEME post and one CEE post will incur an additional notional annual salary cost at mid-point of \$3,847,200, with details as follows –

	Notional annual salary cost at mid-point (\$)	No. of posts
Directorate posts		
CEME (D1)	1,923,600	1
CEE (D1)	<u>1,923,600</u>	<u>1</u>
Total	<u>3,847,200</u>	<u>2</u>

The additional full annual average staff cost, including salaries and staff on-cost, for the two posts is about \$5,057,000.

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28. Besides, the creation of 18 non-directorate posts will bring about an additional notional annual salary cost at mid-point of \$16,036,260. The additional full annual average staff cost, including salaries and staff on-cost, is about \$24,262,000.

29. We have earmarked the necessary funding provision to meet the staff cost of this proposal.

PUBLIC CONSULTATION

30. We consulted the Subcommittee on Matters Relating to Railways of the LegCo Panel on Transport on the above staffing proposal on 6 December 2019. Members of the Subcommittee generally have no objection to the above proposal in enhancing railway safety. At the meeting, Members requested for information on the cost effectiveness of the proposed creation of two directorate posts in the Railways Branch; and how the said staffing proposal would enhance the monitoring of railway safety by giving key performance indicators of the two proposed directorate posts. The supplementary information responding to the relevant enquiries was issued to Members on 24 January 2020. Details have also been included in paragraphs 16 to 17 and 21 to 23 above.

ESTABLISHMENT CHANGES

31. The establishment changes of EMSD's Regulatory Services arm for the past three years are as follows –

Establishment (Note)	Number of Posts			
	Existing (As at 1 April 2020)	As at 1 April 2019	As at 1 April 2018	As at 1 April 2017
A	15	15	15	15
B	240	210	171	165
C	306	290	265	257
Total	561	515	451	437

Note:

A – ranks in the directorate pay scale or equivalent

B – non-directorate ranks, the maximum pay point of which is above MPS point 33 or equivalent

C – non-directorate ranks, the maximum pay point of which is at or below MPS point 33 or equivalent

/CIVIL

CIVIL SERVICE BUREAU COMMENTS

32. The Civil Service Bureau supports the proposed creation of the two permanent directorate posts mentioned above in the Railways Branch to strengthen the regulation on the safety of railway services through a proactive and comprehensive monitoring regime. The grading and ranking of the proposed posts are considered appropriate having regard to the level and scope of responsibilities and professional duties.

ADVICE OF THE STANDING COMMITTEE ON DIRECTORATE SALARIES AND CONDITIONS OF SERVICE

33. The Standing Committee on Directorate Salaries and Conditions of Service has advised that the rank proposed for the two permanent directorate posts mentioned above is appropriate.

Transport and Housing Bureau
April 2020

Number of incidents in the Mass Transit Railway Corporation Limited's railway network caused by equipment failure and resulting in service disruption of eight minutes or above

Year	Service disruption of eight minutes or above due to equipment failure (Total number of cases)	Service disruption of eight minutes or above due to equipment failure (Every million revenue car-kilometres#)
2008	141	0.51
2009	133	0.48
2010	153	0.54
2011	169	0.59
2012	129	0.44
2013	123	0.41
2014	140	0.45
2015	127	0.40
2016	105	0.33
2017	119	0.35
2018	111	0.32
2019	102	0.30

'revenue car-kilometres' is the total kilometres travelled by Mass Transit Railway Corporation Limited's trains for passenger service × number of cars per train.

Job Description
Proposed Chief Engineer/Railways 3
Railways Branch, Electrical and Mechanical Services Department

Rank : Chief Electrical and Mechanical Engineer (D1)

Responsible to : Assistant Director/Railways (AD/R)

The aim of the post –

To oversee and steer the implementation of comprehensive assessment on the asset management system (AMS) and safety management system (SMS) of the entire railway network through direct assessment of the maintenance regime, risk classification, failure mode analysis, and the review and improvement processes of AMS and SMS of the Mass Transit Railway Corporation Limited (MTRCL) to strengthen the regulation of railway safety and eliminate system failure due to equipment failure and human factors.

Main duties and responsibilities –

1. To formulate strategies and implement proactive and comprehensive audits of AMS and SMS of the entire railway network;
2. To conduct comprehensive assessment on the entire railway network by reviewing the effectiveness of the maintenance regime, risk identification and mitigation, failure mode analysis, and corrective/preventive measures, and to promote corresponding improvements in AMS and SMS to reduce system failure due to equipment failure and human factors;
3. To oversee the benchmarking of the current AMS and SMS with the corresponding railway SMS in overseas railway network;
4. To provide the Transport and Housing Bureau with professional advice and technical support on issues relating to the comprehensive audits of AMS and SMS; and
5. To attend meetings of the Legislative Council (LegCo) Panel on Transport and its Subcommittee on Matters Relating to Railways.

/Job

Job Description
Proposed Chief Engineer/Railways 4
Railways Branch, Electrical and Mechanical Services Department

Rank : Chief Electronics Engineer (D1)

Responsible to : AD/R

The aim of the post –

To oversee the safety regulation of the asset replacement projects and railway projects of the MTRCL; to step up monitoring of the track systems.

Main duties and responsibilities –

1. To oversee the safety aspects of asset replacement projects and major modification works in railway premises including high/low voltage power system replacement projects, closed-circuit television system and air-cooled chiller replacement projects;
2. To oversee the safety related matters of the railway projects of the MTRCL (including the North South Line of the Shatin to Central Link);
3. To chair some of the inter-departmental working groups on safety matters of railway projects and assist in inter-departmental coordination work on matters concerning railway safety and security;
4. To oversee the safe operations of the Automated People Mover (APM) system of the Airport in accordance with the Airport Authority (Automated People Mover) (Safety) Regulation (Cap. 483C) and APM system of the Three-Runway System Project with subsequent operation and maintenance, asset management and replacement of the existing APM system; and
5. To attend meetings of the LegCo Panel on Transport and its Subcommittee on Matters Relating to Railways.

**Revised Job Description
Chief Engineer/Railways 1
Railways Branch, Electrical and Mechanical Services Department**

Rank : Chief Electrical and Mechanical Engineer (D1)

Responsible to : Assistant Director/Railways (AD/R)

Main duties and responsibilities –

1. To formulate policies and strategies concerning railway safety, and oversee the safe operation of the existing railway lines (including Kwun Tong Line, Tseung Kwan O Line, Tsuen Wan Line, Airport Express Line, Tung Chung Line, Disneyland Resort Line and Light Rail), tramway and peak tramway;
2. To lead the Railways Branch in executing the regulatory functions in accordance with the relevant Ordinances, Regulations (i.e. the Mass Transit Railway Ordinance (Cap. 556), Mass Transit Railway Regulations (Cap. 556A), Tramway Ordinance (Cap. 107), Peak Tramway Ordinance (Cap. 265) and Peak Tramway (Safety) Regulations (Cap. 265A)) and Operating Agreement;
3. To oversee the investigations of railway incidents and follow up on the relevant improvement measures of the railway operator, and provide guidance and advice on matters concerning railway safety and major modifications of the existing railway lines;
4. To oversee the safety preventive measures on railway operation of the Mass Transit Railway Corporation Limited (MTRCL);
5. To assist in inter-departmental coordination work on matters concerning railway safety and security; and
6. To attend meetings of the Legislative Council (LegCo) Panel on Transport and its Subcommittee on Matters Relating to Railways.

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Revised Job Description
Chief Engineer/Railways 2
Railways Branch, Electrical and Mechanical Services Department

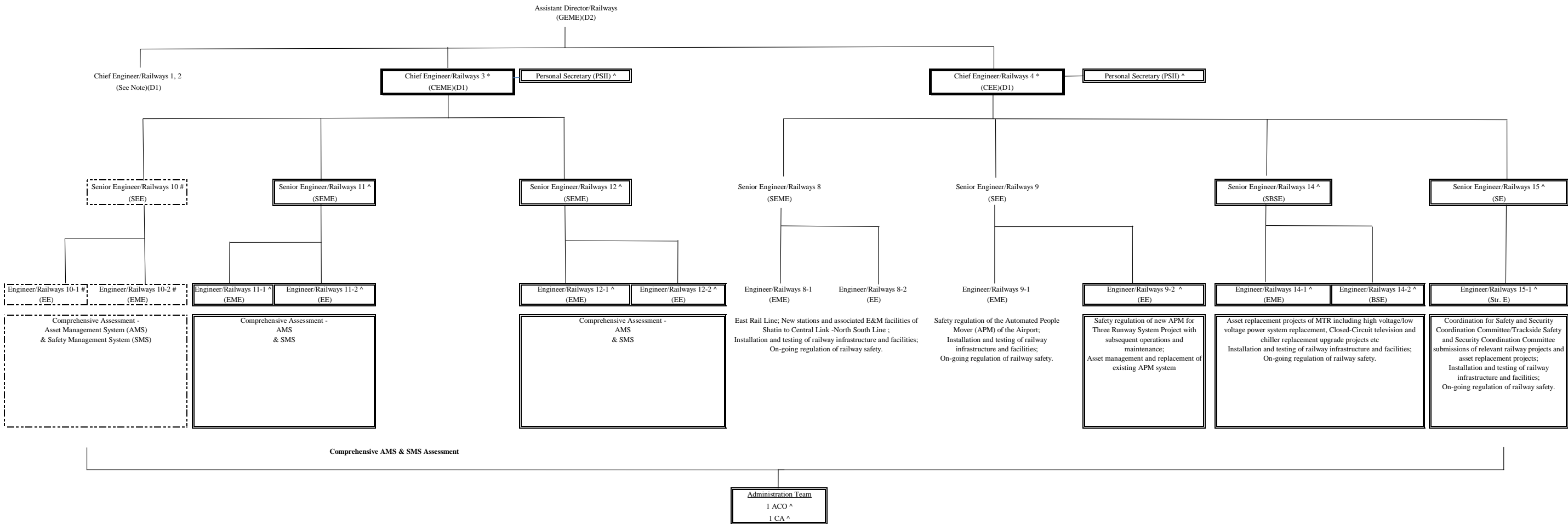
Rank : Chief Electronics Engineer (D1)

Responsible to : AD/R

Main duties and responsibilities –

1. To oversee the safe operation of the existing railway lines (including Island Line, South Island Line, West Rail Line, Tuen Ma Line Phase 1, East Rail Line and the Guangzhou-Shenzhen-Hong Kong High Speed Rail (Hong Kong Section)) in accordance with the MTR Ordinance (Cap. 556);
2. To oversee the investigations of railway incidents and follow up on the relevant improvement measures of the railway operator;
3. To oversee the safety preventive measures on railway operation of the MTRCL;
4. To oversee the safety related matters of the railway projects such as Tuen Ma Line (including the interface between systems, safety inspections, tests and trial-runs) and to continually oversee their safety performance after commencement of operation;
5. To chair some of the inter-departmental working groups on safety matters of railway projects and assist in inter-departmental coordination work on matters concerning railway safety and security; and
6. To attend meetings of the LegCo Panel on Transport and its Subcommittee on Matters Relating to Railways.

Proposed Organisation of Railways Branch, EMSD



Legend:

- framed and marked by * - Directorate permanent posts to be created
- framed and marked by ^ - Additional non-directorate permanent posts
- framed and marked by # - Existing 3-years time limited posts (created from July 2018 to March 2021)

Note :

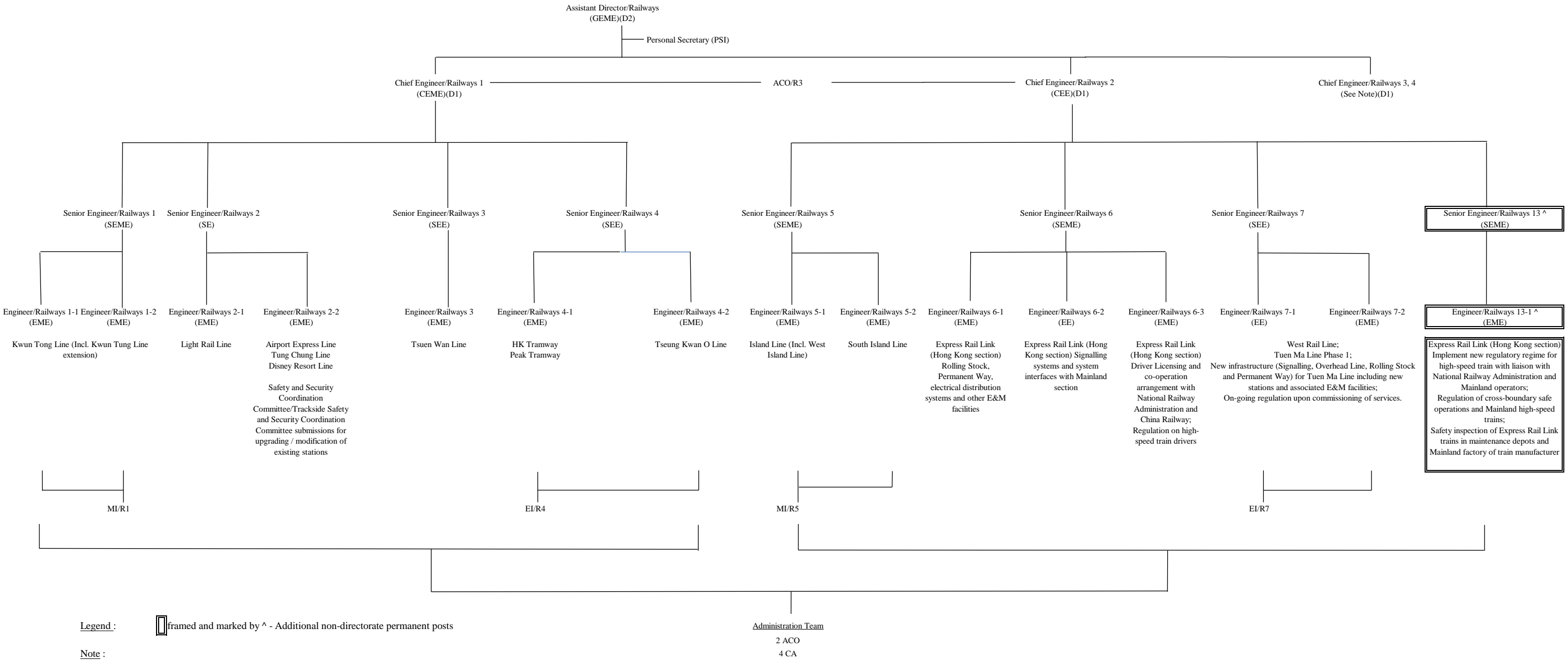
Organization Chart of Railways Divisions 1 to 2 are in Page 2

The description under each team is the main responsibilities of the team

Each team will provide professional support to other teams in their respective area of expertise

- | | |
|---|--|
| ACO - Assistant Clerical Officer | GEME - Government Electrical and Mechanical Engineer |
| BSE - Building Services Engineer | PSII - Personal Secretary II |
| CA - Clerical Assistant | SBSE - Senior Building Services Engineer |
| CEE - Chief Electronics Engineer | SE - Senior Engineer |
| CEME - Chief Electrical and Mechanical Engineer | SEE - Senior Electronics Engineer |
| EE - Electronics Engineer | SEME - Senior Electrical and Mechanical Engineer |
| EME - Electrical and Mechanical Engineer | Str.E - Structural Engineer |

Proposed Organisation of Railways Branch, EMSD



Each team will provide professional support to other teams in their respective area of expertise

- ACO - Assistant Clerical Officer

CA - Clerical Assistant

CEE - Chief Electronics Engineer

CEME - Chief Electrical and Mechanical Engineer

EE - Electronics Engineer

EI - Electrical Inspector

EME - Electrical and Mechanical Engineer
- GEME - Government Electrical and Mechanical Engineer

MI - Mechanical Inspector

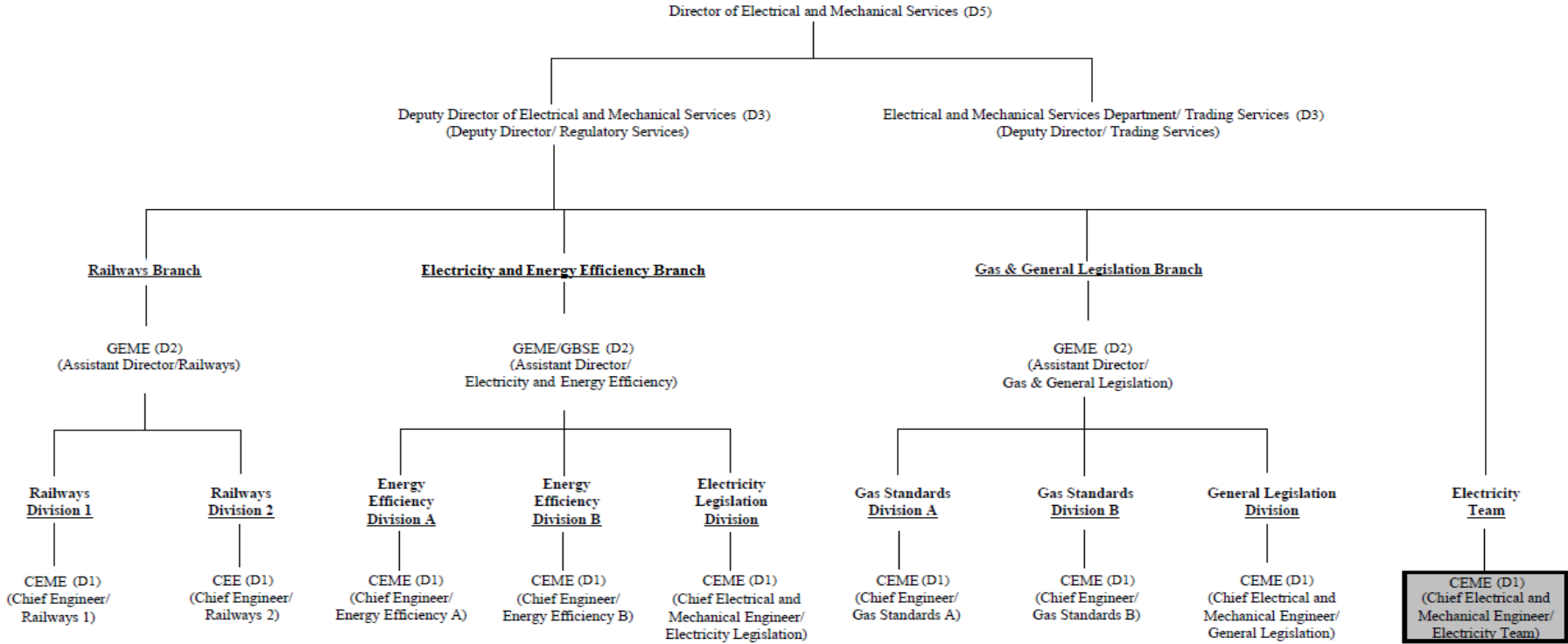
PSI - Personal Secretary I


SE - Senior Engineer

SEE - Senior Electronics Engineer

SEME - Senior Electrical and Mechanical Engineer

Existing Organisation of the Electrical and Mechanical Services Department (Regulatory Services)



 On attachment to the Environment Bureau

Legend :

CEE	Chief Electronics Engineer
CEME	Chief Electrical and Mechanical Engineer
GBSE	Government Building Services Engineer
GEME	Government Electrical and Mechanical Engineer

**Areas of Responsibilities of the Chief Engineers
in the Regulatory Services of the Electrical and Mechanical Services
Department**

Major duties and responsibilities of the Chief Engineers in the Regulatory Services of the Electrical and Mechanical Services Department (EMSD) are summarised in the following paragraphs.

Under Assistant Director/Railways (AD/R)

Chief Engineer/Railways 1 (CE/R1)

2. CE/R1 assists AD/R in ensuring the safe operation of the existing railway system and in developing policies and strategies with regard to railway safety. He/She oversees the safe operation of existing railway lines (including Kwun Tong Line, Tseung Kwan O Line, Tsuen Wan Line, Airport Express Line, Tung Chung Line, Disneyland Resort Line and Light Rail), tramway and peak tramway. He/She leads the Railways Branch in executing the regulatory functions in accordance with the relevant Ordinances, Regulations (i.e. the Mass Transit Railway Ordinance (Cap. 556), Mass Transit Railway Regulations (Cap. 556A), Tramway Ordinance (Cap. 107), Peak Tramway Ordinance (Cap. 265) and Peak Tramway (Safety) Regulations (Cap. 265A)) and Operating Agreement. He/She also oversees the safety preventive measures on railway operation by the Mass Transit Railway Corporation Limited (MTRCL) and the safety matters of some of the asset replacement projects and major enhancement work at railway premises. He/She is responsible for maintaining close liaison with the railway operator's management to give guidance and advice on railway safety matters and major modifications of the existing railway lines. He/She also assists in the inter-departmental coordination work with regard to railway safety and security. He/She provides the Transport and Housing Bureau (THB) with professional advice and technical support in respect of railway safety matters and attends meetings of the Legislative Council (LegCo) Panel on Transport and its Subcommittee on Matters Relating to Railways in respect of safety matters of existing railway system.

Chief Engineer/Railways 2 (CE/R2)

3. CE/R2 assists AD/R in overseeing safety related matters of existing railway lines and railway projects, and monitoring the safety performance of these railway projects after they commence operation. He/She oversees the safe operation of the existing railway lines (including Island Line, South Island Line,

West Rail Line, Tuen Ma Line Phase 1, East Rail Line and High Speed Rail) in accordance with the Mass Transit Railway Ordinance (Cap. 556) and the Automated People Mover at the Hong Kong International Airport in accordance with the Airport Authority (Automated People Mover) (Safety) Regulation (Cap. 483C). He/She also oversees safety related matters of the railway projects (including Tuen Ma Line and North South Line of the Shatin to Central Link). He/She chairs the inter-departmental working group on safety matters of new railway projects and assists in the inter-departmental coordination work with regard to railway safety and security. He/She is responsible for overseeing the interface between existing railway system and relevant railway projects, its safety inspections, tests and trial-runs, and to oversee their safety performance after they commence operation. He/She also provides THB with professional advice and technical support in respect of new railway projects and provides THB and relevant departments with professional advice on the safety related issues of the recommended railway schemes in the Railway Development Strategy 2014. He/She attends meetings of the LegCo Panel on Transport and its Subcommittee on Matters Relating to Railways in respect of safety matters of new railway projects.

Under Assistant Director/Electricity and Energy Efficiency (AD/EE)

Chief Engineer/Energy Efficiency A (CE/EEA)

4. CE/EEA assists AD/EE in providing professional support and advice to the Environment Bureau (ENB) on the formulation of policies, strategies and initiatives on energy efficiency and conservation and the application of renewable energy. He/She develops the Voluntary and Mandatory Energy Efficiency Labelling Schemes for electrical and gas appliances, and promotes public awareness on the use of energy-efficient appliances. He/She is responsible for the administration and enforcement of the Energy Efficiency (Labelling of Products) Ordinance (Cap. 598). He/She promotes the adoption of energy-efficient technologies, renewable energy, energy audits and the best practices in the public and private sectors as well as the application of new and emerging energy efficiency technologies. He/She is responsible for coordinating with government bureaux and departments as well as private organisations for the promotion of energy programmes promulgated by international/regional/local energy organisations such as the Asia-Pacific Economic Cooperation and participating in their activities.

Chief Engineer/Energy Efficiency B (CE/EEB)

5. CE/EEB assists AD/EE in providing professional support and advice to ENB on the formulation of policies, strategies and initiatives on energy efficiency and conservation and the application of renewable energy. He/She

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promotes the wider use of water-cooled air-conditioning systems in Hong Kong. He/She is responsible for the administration and enforcement of the Buildings Energy Efficiency Ordinance (Cap. 610) and District Cooling Services Ordinance (Cap. 624). Besides, he/she oversees the implementation of the district cooling system at the Kai Tak Development, and provides support to studies on provision of district cooling systems in new development areas and oversees subsequent implementation works. He/She is also responsible for the regulation of improperly maintained or contaminated fresh water cooling towers under the Public Health and Municipal Services Ordinance (Cap. 132).

Chief Electrical and Mechanical Engineer/Electricity Legislation (CEME/EL)

6. CEME/EL assists AD/EE in the management and administration of the regulatory functions related to electricity safety. He/She is responsible for the administration and enforcement of the Electricity Ordinance (Cap. 406) for ensuring safe electrical installations, safe household electrical products and the safe and reliable supply of electricity. He/She introduces and implements new legislative proposals/legislative amendments and codes of practice/guidance notes for the purpose of improving safety standards of the electrical industry and enhancing electricity safety of the public. He/She assists AD/EE in providing support to the Director of Electrical and Mechanical Services in the Daya Bay Contingency Plan and related technical advice on nuclear power safety. He/She is also responsible for maintaining liaison with outside organisations/government departments for the promotion of electricity safety and new/existing legislation.

Under Assistant Director/Gas and General Legislation (AD/GGL)

Chief Engineer/Gas Standards A (CE/GSA)

7. CE/GSA assists AD/GGL in monitoring the performance of Hong Kong and China Gas Co. Ltd. to ensure that its gas production plants and notifiable gas installations are operated to the highest possible standards and that the requirements of the Gas Safety (Gas Supply) Regulations are fully complied with. He/She is responsible for the operation of registration scheme for gas contractors and installers and manages the quality assurance of town gas and cylinder liquefied petroleum gas (LPG) installation work in all market sectors. He/She manages the investigation, preparation and processing of cases for prosecution under the Gas Safety Ordinance (Cap. 51). He/She is also responsible for the processing of complaints from members of the public and representative groups concerned with the safe supply and use of gas. He/She gives expert advice to professional agencies in both public and private sectors on the supply and use of cylinder LPG and town

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gas premises and coordinates activities associated with the promotion of gas safety. He/She is responsible for developing, introducing and monitoring new training packages for the gas industry in conjunction with training establishments in the private and public sectors.

Chief Engineer/Gas Standards B (CE/GSB)

8. CE/GSB assists AD/GGL in administering the Gas Safety Ordinance (Cap. 51) and subsidiary regulations on behalf of the Gas Authority, the Oil (Conservation and Control) Ordinance (Cap. 264) on behalf of the Director of Oil Supplies and implementing the devised comprehensive monitoring regime on the development of refrigerants of low Global Warming Potential (GWP). He/She monitors the performance of gas supply companies to ensure that LPG terminals, gas production plants and notifiable gas installations are operated to the highest standards and that the requirements of the Gas Safety (Gas Supply) Regulations are fully complied with. He/She also assists AD/GGL in advising the Secretary for the Environment on aspects of gas supply on behalf of the Gas Authority. He/She monitors the implementation of the voluntary Code of Practice with the major oil companies and the Hong Kong and China Gas Co. Ltd. on strategic reserve of gas oil and naphtha respectively. He/She also represents the Gas Authority on the Coordinating Committee on Land Use Planning and Control relating to Potentially Hazardous Installations. To ensure gas safety arising from the low GWP refrigerants, he/she also assists AD/GGL in reinforcing the liaison and communication with stakeholders in the air-conditioning and refrigeration trade and relevant government departments, conducting surveillance inspections, and rolling out education and publicity activities to the trade and the public.

Chief Electrical and Mechanical Engineer/General Legislation (CEME/GL)

9. CEME/GL assists AD/GGL in administering the Lifts and Escalators Ordinance (Cap. 618), the Aerial Ropeways (Safety) Ordinance (Cap. 211), the Amusement Rides (Safety) Ordinance (Cap. 449) and the Builders' Lifts and Tower Working Platforms (Safety) Ordinance (Cap. 470). He/She oversees the enforcement of the legislation in respect of the safety of lifts and escalators, aerial ropeways, amusement rides, builders' lifts and tower working platforms, and other general mechanical installations and to ensure that proper actions are taken in respect of non-compliance and against offenders. He/She is also responsible for the introduction and implementation of new legislative proposal/legislative amendment and codes of practice/guidance notes for the purpose of improving safety standards and enhancing public safety. He/She administers the registration schemes and the staff management and financial control of a professional team for the development of a regulatory regime for the vehicle maintenance trade. He/She maintains liaison with outside organisations and government departments for the promotion of safety and new/existing legislation of a mechanical nature.

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Under Deputy Secretary for the Environment (DS(E)) and Deputy Director/Regulatory Services (DD/RS)

Chief Electrical and Mechanical Engineer/Electricity Team (CEME/ET)

10. CEME/ET is part of EMSD's establishment and is attached to ENB. He/She assists DS(E) and DD/RS in providing professional advice and proposals for implementation of the initiatives and measures of the Scheme of Control Agreements (SCAs) with the power companies, review of SCAs and matters related to energy policy and electricity industry, formulation of future fuel mix for electricity generation, and review of development of the electricity market and related regulatory framework in Hong Kong. He/She directs the operation and management of the Electricity Team for monitoring the power companies' performance under SCAs, especially in the Auditing Review, Tariff Review and Development Plan Review, and provides professional advice on the regulation of the power companies under SCAs. He/She is responsible for attending meetings of the LegCo and the Energy Advisory Committee to help explain the Government's objectives and proposals and meetings with the power companies on their electricity-related matters under SCAs. He/She is also responsible for managing consultancy studies related to development of the electricity market and regulatory regime, monitoring of power companies, and assessment of power companies' development plans.
