

## **Legislative Council Panel on Transport**

### **Staffing Proposal to Enhance the Overseeing of Railway Safety**

#### **Purpose**

This paper briefs Members on our proposal to strengthen the manpower of Hong Kong Railway Inspectorate (HKRI) by upgrading its existing head from a Chief Electrical and Mechanical Engineer (CEME)(D1) to a Government Electrical and Mechanical Engineer (GEME)(D2) post, creating two non-directorate engineering posts, as well as to integrate HKRI into the Electrical and Mechanical Services Department (EMSD). We plan to submit the proposal to the Establishment Subcommittee (ESC) of the Finance Committee (FC) for consideration at its meeting on 12 December 2007 and for seeking FC's approval on 11 January 2008.

#### **Justification**

##### Background

2. The HKRI was established in 1990 and was attached to the then Transport Branch (TB) of the Government Secretariat which is now the Transport and Housing Bureau (THB). The current HKRI is headed by the Chief Inspecting Officer/Railways (ranked at CEME) (D1), with the support of three teams comprising six professional and two secretarial staff. The existing organisation chart of the HKRI is at Annex 1.

3. The HKRI is the regulatory body of the railway lines operated by the MTR Corporation Limited and Kowloon-Canton Railway Corporation, and the automated people mover operated by the Airport Authority in the terminal building of the Hong Kong International Airport. The role of the HKRI is to oversee the safe operation of all the above railways. The main functions of HKRI can be categorised into the following main areas -

- (a) investigating into railway incidents;
- (b) ensuring the adoption of appropriate safety practices by the railway corporations;
- (c) assessing and approving new railways and major modifications; and
- (d) assessing and following up the railway corporations' improvement measures.

#### Need to strengthen the manpower of HKRI

4. When the HKRI was established in 1990, it was responsible for the safety of a railway network of only about 110 km in length which included MTR Tsuen Wan Line, Kwun Tong Line and Island Line, as well as KCR East Rail from Lo Wu to Hung Hom and Light Rail from Tuen Mun to Yuen Long. With the extensive infrastructural development in the past 15 years, the length of the railway network has increased to more than 210 km. New lines commissioned include MTR Tung Chung Line, Airport Express, Tseung Kwan O Line, KCR West Rail, East Rail extensions to East Tsim Sha Tsui, Ma On Shan and Lok Ma Chau, Light Rail Extension to Tin Shui Wai and the Automated People Mover in the Airport. Looking into the future, Government is pursuing a number of new railway projects including the West Island Line, South Island Line, Shatin to Central Link and the Express Rail Link to the Mainland. Moreover, the Kowloon Southern Link is expected to be completed in 2009.

5. In the light of the increasing number of new railway projects, the advancement in railway technology, the changes brought about by the merger of the Mass Transit Railway (MTR) and Kowloon-Canton Railway (KCR) systems, and increasing public expectation on continuous improvement in railway safety, we have reviewed with railway experts on how the role and functions of the HKRI could be further enhanced taking into account overseas experience and practices.

6. We have identified the following areas for further

enhancement of HKRI's regulatory functions -

(a) Adopt more measures for the monitoring of railway safety

At present, HKRI examines the regular submissions of railway corporations to monitor their safety performance trends. This can enable HKRI to monitor any unfavourable safety trends for follow up with railway corporations. We consider that the monitoring by HKRI can be made more comprehensive and strategic by taking into account the potential safety risk areas during different phases of a life cycle of each railway.

In other words, in addition to the present arrangement, HKRI will adopt the "risk-based" approach to monitor the safety critical areas and their potential associated risks under different scenarios through the life cycle of a railway. HKRI will also review the priority of these risks regularly to ensure its safe operation throughout different phases of a life cycle of a railway.

(b) Steer the railway corporation to enhance adoption of safety preventive measures

While HKRI will continue to follow up with the railway corporation on railway incidents and monitor the implementation of remedial measures, HKRI also plans to strengthen its function in pursuing with the railway corporation the adoption of early preventive measures with a view to further minimizing the occurrence of incidents.

To achieve this, apart from the risk-based monitoring approach mentioned above, HKRI will also conduct special topic audits. This would enable the railway corporation to implement enhancement measures early for problems that may be identified through these audits to minimize occurrence of incidents. This approach is particularly useful in the time of rail merger to ensure that changes in

relation to merger will not affect the corporation's safety performance.

- (c) Ensure the railway corporation adopts best international safety practices

Railway is the backbone of Hong Kong's public transport system. HKRI considers that the railway corporations should be persistently vigilant in adopting the best international safety practices in railway operations. On this, HKRI needs to enhance its networking with overseas railway regulators for the purpose of experience sharing and keeping track of the latest technology developments and trend of regulatory practices overseas, so as to equip itself with strengthened support and knowledge in this area, with a view to enhancing its monitoring and ensuring that the railway corporation is continuously adopting the most appropriate international standards and practices to safeguard the safety of the traveling public.

- (d) Assessment and approval of new railway projects

As mentioned above, various new railway projects are being planned by the Government and many complicated technical issues are involved. For example, underground stations of the West Island Line will be located much deeper than existing stations, and Express Rail Link will be operating in a tunnel longer than any of the existing lines. Starting from the design stage, HKRI needs to ensure that the infrastructure and equipment designs can address potential safety issues, before they can be opened for public use. HKRI assumes a coordinating and leading role in the approval process. In this regard, the manpower of HKRI would need to be strengthened so that it could enhance its effectiveness in coordinating with various stakeholders and its efficiency in examining the proposals with a view to facilitating the implementation of railway projects in a safe and timely manner.

7. In the light of the above, HKRI would need to have adequate and appropriate resources for it to effectively perform its proposed enhanced role and functions. We propose to –

- (a) strengthen the professional manpower of HKRI by upgrading its existing head from a CEME (D1) to a GEME (D2) post, and creating two non-directorate engineering posts; and
- (b) integrate HKRI into EMSD.

Need to upgrade the head of HKRI from a CEME Post to a GEME (D2) Post

8. We consider that the head of HKRI should be pitched at the rank of GEME (D2) so that the incumbent can, at a commensurate rank, efficiently and effectively lead the team to carry out the proposed enhanced regulatory functions of HKRI.

9. To enable HKRI to carry out its monitoring function through the risk-based approach mentioned in paragraph 6(a), it is necessary for the head of HKRI to be a seasoned professional who is equipped with the necessary management perception to monitor railway safety in a more strategic manner. He also needs to be well versed with the engineering and safe operation of the railway systems to enable early identification of potential risk areas that require special topic audits, pursue with the railway corporation the adoption of early preventative measures and follow up with the senior management of the railway corporation to deal with the audit outcome in a timely manner. Since the head of HKRI is required to carry out these strategic tasks which require thorough analysis, we consider it necessary for the head to be a D2 officer.

10. Similarly, in paragraph 6(c) we point out the need and importance for HKRI to keep abreast of best international safety practices. The head of HKRI must therefore be of sufficiently senior ranking in order to build up connections with overseas railway regulators more systematically, equip the HKRI with up-to-date insight and

experience in railway safety monitoring, effectively monitor the railway corporation in adopting safety standards commensurate with overseas practices, and ensure the leading position of Hong Kong's railways in terms of safety.

11. For approval of new works and major modifications at existing railways, the head of HKRI is required to chair cross-departmental committees to ensure compliance by the railway corporations in these areas. Taking into account the increasing number and complexity of new railway projects set out in paragraph 6(d) above, it is necessary to upgrade the head of HKRI to D2 level with the required experience and expertise for enhancing the effectiveness in coordinating among various stakeholders and the efficiency in the approval process.

12. Apart from the above, the head of HKRI is required to oversee the safety issues in relation to the rail merger. The merger involves a lot of changes and integration on both infrastructure and safety management sides which will take place in the coming years. On the infrastructure side, there would be modification of the interchange stations to facilitate seamless interchange, integration of control centres to allow central control of all railway lines, etc. On the management side, there would be changes and integration of the safety management system, maintenance management system, rules and procedures, etc. It would be necessary for HKRI to ensure all such merger-related safety issues are seamlessly carried out throughout the integration process. A D2 officer will be required to lead the team to follow through all these tasks given their complexity. In fact, in view of the importance of railway safety and the imminent need to address the merger issue, a supernumerary post of GEME (D2) has been created from 1 August 2007 to 31 January 2008 to deal with the preparatory work of safety compliance in relation to the merger.

13. In view of the additional measures to be adopted in safety monitoring; the expansion of the railway network at the same time which will lead to increase in HKRI's workload; and the implementation of merger-related safety issues in the coming years, we expect that the head of HKRI will need to demonstrate good leadership, professionalism and management skills to develop strategic safety plans to monitor the

safety compliance of the railway corporation. It is therefore essential to upgrade the head of HKRI from a CEME (D1) to a GEME (D2) post to take up these elevated responsibilities. The job descriptions of the existing CEME post and proposed GEME posts are at Annexes 2 & 3 respectively. The proposed organisation chart of HKRI after the transfer from THB is at Annex 4.

#### Integrating HKRI into EMSD

14. HKRI is currently administratively attached to the Bureau and is operating independently. Most of the engineers in HKRI are seconded from EMSD given the relatively high relevance of electrical and mechanical engineering in railway engineering systems such as signalling, trains, power supply and fire services. Indeed, EMSD has been providing technical support and advice to the Bureau when major railway incidents occur. We have assessed and considered that housing HKRI under EMSD would be the most appropriate means to ensure flexibility in deploying relevant expertise for the purpose of overseeing railway safety, facilitating the nurturing of expertise and experience of HKRI, allowing HKRI's work to be monitored and supervised by senior officers of the professional grade of the department, and providing in-house professional support to HKRI. Moreover, transferring HKRI to EMSD would have an added advantage of putting the regulatory control of all railways including Hong Kong Tramway and Peak Tram currently under the jurisdiction of EMSD into a single team with extensive experience in regulatory functions. We do not expect the transfer would introduce any changes to the portfolio of officers in THB since the policy on railway safety will still be owned by the Bureau.

#### Non-directorate support

15. At present, there are eight non-directorate grade staff including six professional and two secretarial staff supporting HKRI. In order to achieve the enhancement outlined in paragraph 6 above, a new team consisting of one senior professional engineer, ranked at Senior Electrical and Mechanical Engineer/Senior Electronics Engineer

(SEME/SEE), and one professional engineer, ranked at Electrical and Mechanical Engineer/Assistant Electrical and Mechanical Engineer/Electronics Engineer/Assistant Electronics Engineer (EME/AEME/EE/AEE) will be set up. The major role of this new team is to assist the GEME to develop and implement additional safety monitoring measures, to enhance communication with the public, to strengthen networking with overseas railway regulators and railway organisations, and to monitor and conduct audits in relation to the safety-related merger activities.

16. In addition to the above two professional posts, two clerical and one secretarial posts (offset by two existing secretarial posts) will be created to strengthen the logistical support to HKRI. The two staff currently taking up duties on safety regulation of tramway and peak tram (i.e. one EME and one Electrical Inspector (EI)) will also be grouped under the supervision of the GEME.

### **Timing for implementation**

17. We propose to integrate HKRI into EMSD in two phases. The current supernumerary GEME post reviewing the safety issues on merger of the MTR and KCR systems will lapse on 1 February 2008. We consider it most appropriate to upgrade the CEME (D1) post to a GEME (D2) post with effect from 1 February 2008 so that the merger-related safety issues will be followed through without a break. The existing non-directorate staff in HKRI will be permanently redeployed to EMSD and put under the supervision of the GEME post with the creation of the secretarial and clerical support staff on the same date. The creation of the two non-directorate professional engineer grade posts (i.e. one SEME/SEE and one EME/AEME/EE/AEE) will take effect on 1 April 2008.

### **Alternatives considered**

18. The total daily patronage of all railways in Hong Kong is about four million. Railway safety is very important issue. While

engaging consultants to carry out part of HKRI's regulatory functions could be an alternative, we consider it inappropriate to do so taking into account the need to ensure the integrity and impartiality of safety regulation. A comprehensive review has been done and it is observed that existing resources in HKRI are fully stretched to monitor the safe operation of existing railway lines. Existing staff are already heavily loaded and it is not possible for them to take on additional duties relating to railway safety.

### **Financial Implications**

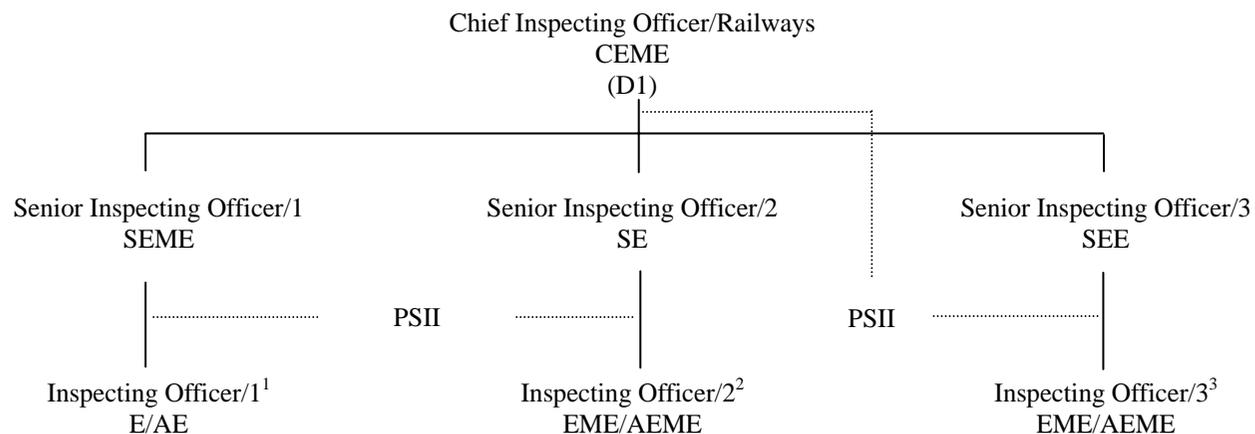
19. The proposed changes in directorate establishment will bring about an additional notional annual salary cost at mid-point (NAMS) of \$226,800 and in full annual average staff cost of \$354,000. The proposal has been covered in the paper on "Update on Overall Directorate Establishment Position" (ECI(2007-08)8) issued by the Administration on 9 November 2007. The permanent redeployment of eight non-directorate posts from TB of THB to EMSD is cost-neutral. Since the permanent redeployment of posts on 1 February 2008 will involve the change in NAMS ceiling of TB and EMSD, we will seek the approval of ESC/FC in the ESC submission. The provision for the additional non-directorate posts set out in paragraphs 15 and 16 will be met from within EMSD's approved allocations.

### **Advice Sought**

20. Members are invited to give their views on this paper and indicate support for the staffing proposal.

Transport and Housing Bureau  
November 2007

Existing Organisation Chart of Hong Kong Railway Inspectorate



Legend

- CEME - Chief Electrical and Mechanical Engineer
- SE - Senior Engineer
- SEME - Senior Electrical and Mechanical Engineer
- SEE - Senior Electronics Engineer
- E/AE - Engineer/Assistant Engineer
- EME/AEME - Electrical and Mechanical Engineer/Assistant Electrical and Mechanical Engineer
- PS II - Personal Secretary II

<sup>1</sup> Responsible for the regulatory control of Mass Transit Railway Lines, Airport Automated People Mover and their Extensions

<sup>2</sup> Responsible for the regulatory control of West Rail, Light Rail, Kowloon Southern Link and their Extensions

<sup>3</sup> Responsible for the regulatory control of East Rail, Ma On Shan Rail, Sheung Shui to Lok Ma Chau Spur Line and their Extensions

### Job Description

**Post Title** : Chief Inspecting Officer (Railways)  
**Rank** : Chief Electrical and Mechanical Engineer (D1)  
**Responsible to** : Principal Assistant Secretary for Transport and Housing

#### Duties and Responsibilities -

1. to lead the Hong Kong Railway Inspectorate in enforcing regulatory functions and introducing new requirements as necessary in accordance with the relevant Ordinances, Regulations and Operating Agreements;
2. to develop strategy in ensuring railway safety;
3. to liaise with senior management of railway corporation through regular and ad-hoc meetings to give guidance and recommendation on railway safety matters, and to steer and monitor the railway corporation to take positive actions in ensuring safety;
4. to chair cross-departmental safety committees and coordinate with other government departments at senior management level including but not limited to the Buildings Department, Fire Services Department, Highways Department, Hong Kong Police Force and Transport Department in reviewing design, construction, commissioning, operation and modifications of railways and other railway safety matters;
5. to attend project implementation steering committees to give professional advice on railway safety and suitability of opening of new railways, and to provide professional advice to the Transport and Housing Bureau on railway safety matters; and
6. to assist the Transport and Housing Bureau in preparing submissions to Legislative Council (LegCo) on railway safety matters and to attend LegCo meetings as required.

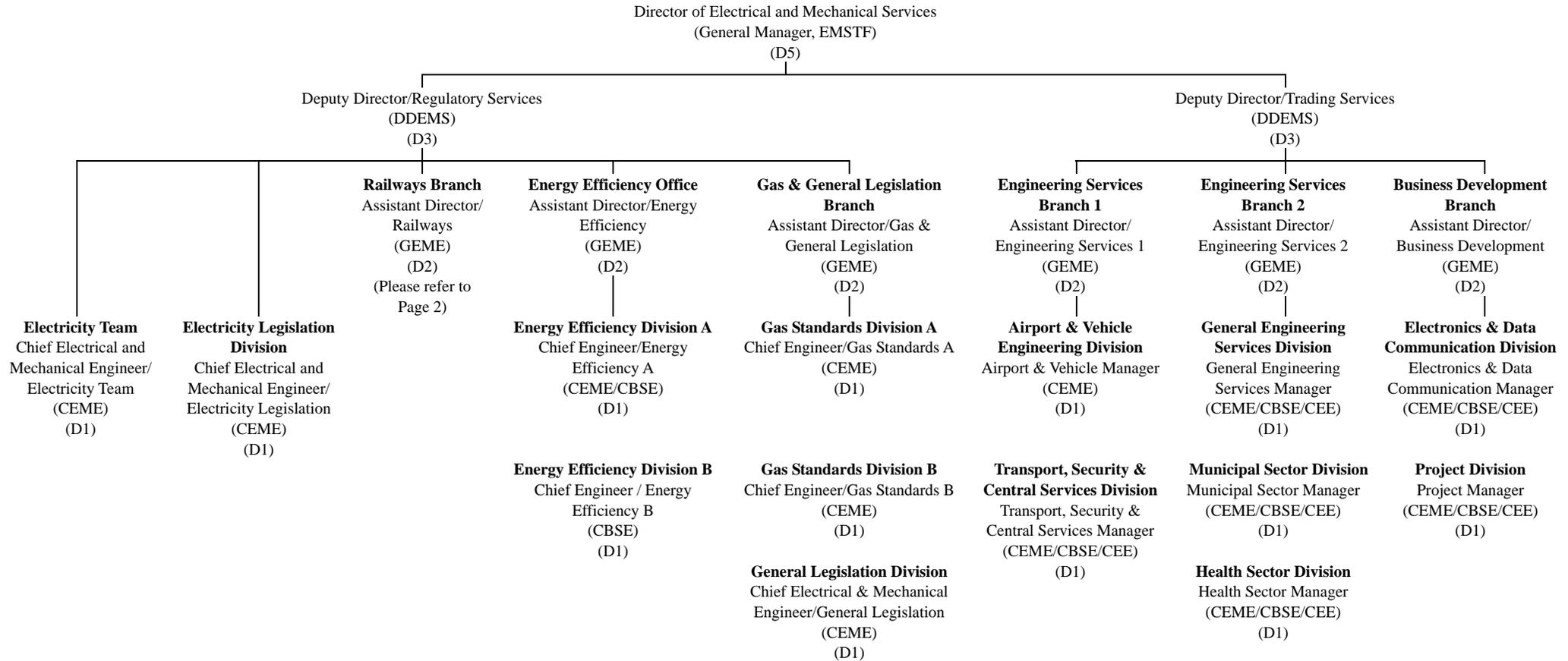
**Job Description**

<b>Post Title</b>	:	Assistant Director/ Railways
<b>Rank</b>	:	Government Electrical and Mechanical Engineer (D2)
<b>Responsible to</b>	:	Deputy Director of Electrical and Mechanical Services/Regulatory Services

**Duties and Responsibilities -**

1. to lead the Hong Kong Railway Inspectorate in enforcing regulatory functions and introducing new requirements as necessary in accordance with the relevant Ordinances, Regulations and Operating Agreements;
2. to develop strategy in ensuring railway safety, which includes but not limited to the adoption of a risk-based approach in monitoring and conduct of special topic audits;
3. to liaise with senior management of railway corporation through regular and ad-hoc meetings to give guidance and recommendation on railway safety matters, and to steer and monitor the railway corporation to take positive actions in ensuring safety;
4. to chair cross-departmental safety committees and coordinate with other government departments at senior management level including but not limited to the Buildings Department, Fire Services Department, Highways Department, Hong Kong Police Force and Transport Department in reviewing design, construction, commissioning, operation and modifications of railways and other railway safety matters;
5. to attend project implementation steering committees to give professional advice on railway safety and suitability of opening of new railways, and to provide professional advice to the Transport and Housing Bureau on railway safety matters;
6. to network with overseas railway regulators and relevant organisations for the development of strategy and policy to ensure that the safety standards in Hong Kong are kept in pace with overseas practices and safety of local railways are commensurate with international levels;
7. to develop strategy to interface with the public through the implementation of public education programmes by the department or jointly implemented with the railway corporation in enhancing safety and to explain the investigation result of railway incidents; and
8. to assist the Transport and Housing Bureau in preparing submissions to Legislative Council (LegCo) on railway safety matters and to attend LegCo meetings as required.

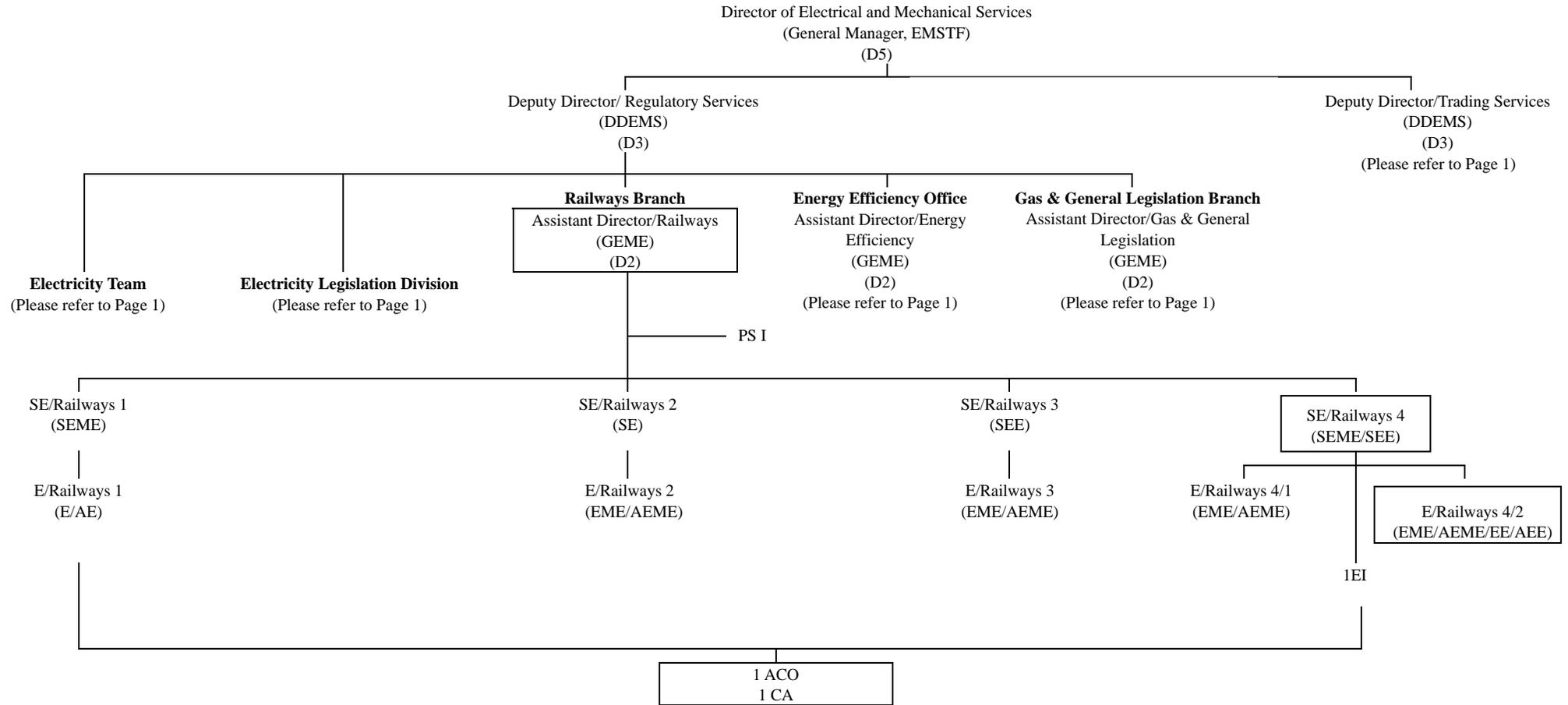
**Proposed Organisation Chart of Electrical and Mechanical Services Department**



**Legend**

- DDEMS Deputy Director of Electrical and Mechanical Services
- GEME Government Electrical and Mechanical Engineer
- CEME Chief Electrical and Mechanical Engineer
- CBSE Chief Building Services Engineer
- CEE Chief Electronics Engineer
- EMSTF Electrical and Mechanical Services Trading Fund

**Proposed Organisation Chart of Electrical and Mechanical Services Department**



**Legend**



- DDEMS** Deputy Director of Electrical and Mechanical Services
- GEME** Government Electrical and Mechanical Engineer
- SE** Senior Engineer
- SEME** Senior Electrical and Mechanical Engineer
- SEE** Senior Electronics Engineer
- E/AE** Engineer/Assistant Engineer
- EME/AEME** Electrical and Mechanical Engineer/Assistant Electrical and Mechanical Engineer

- EE/AEE** Electronics Engineer/Assistant Electronics Engineer
- EI** Electrical Inspector
- PS I** Personal Secretary I
- ACO** Assistant Clerical Officer
- CA** Clerical Assistant
- EMSTF** Electrical and Mechanical Services Trading Fund