

香港電燈有限公司
The Hongkong Electric Co., Ltd.

General Practice for Works near 132-kV Electric Overhead Lines

1. Introduction

132-kV overhead transmission lines are used to transmit electricity within the Hong Kong Island. In view of the high voltage on these lines, any interference or damages to these lines may have serious consequences which may include personal injury and supply interruption.

This General Practice outlines the potential risks associated with works near the 132-kV overhead transmission lines and precautions to be taken to avoid danger and damages.

This General Practice is intended for general guidance only.

The Hongkong Electric Co., Ltd. (hereinafter referred to as “HK Electric”) shall not be liable for any claim from any persons arising from or as a consequence of any works performed near the overhead transmission lines or for any loss howsoever arising from or in reliance upon the whole or in part of the content of this Practice.

The contractor performing works near the overhead transmission lines will be fully responsible for all damages, losses, costs and expenses suffered or incurred by HK Electric or any person arising out of or as a result of such works, irrespective of whether this Practice has been fully complied with by the contractor.

2. Scope

This General Practice applies to works carried out in close vicinity to the overhead transmission lines. The term “works” is defined in Clause 3 of this Practice.

All personnel working in close vicinity to the overhead transmission line should take all necessary precautionary measures to protect the overhead transmission lines from interferences and/or damages. Notwithstanding the provision of this Practice, all personnel responsible for the works must exercise due diligence and all reasonable care in carrying out their works in conformity with sound technical and engineering practices.

This General Practice is intended to be used by all those who have responsibilities under relevant legislation, including employers, employees, contractors and companies and those concerned with planning, organising and supervising works near overhead transmission lines. This Practice should be read in conjunction with other relevant codes, guidance etc. applicable to the works such as “General Practice on Execution of Excavation and Construction Work near Underground Electricity Cables” published by HK Electric.

3. Definitions

The “overhead transmission lines” referred to in this Practice means the 132-kV bare conductors installed above ground which are owned by HK Electric for the purpose of transmitting electricity between switching stations in the Hong Kong Island. The overhead lines are of double circuits design with two circuits supported on the steel transmission towers. All accessories forming parts of the overhead transmission lines and their terminal compounds are also included in this Practice.

The “works” refers to any kind of activities which may include but not limited to : -

- a. Any kind of building construction, site formation works, ground investigation, foundation works, repairs, demolition, alteration and every kind of building operation, and includes drainage work;
- b. the laying out, construction, alteration or repair of any road, footpath, tunnel, reservoir and pipeline;
- c. the extraction of material from land;
- d. landfill works; or
- e. any vegetation maintenance work such as planting, trimming or falling operations.

The “contractor” means any person or business entity responsible for performing the works.

4. The Dangers Associated with Overhead Transmission Lines

Direct contact with overhead transmission lines may result in severe body injury, or even fatality, to the people carrying out the works and to others in the vicinity as a result of flashover which may sometimes be associated with explosion and fire.

Besides, wide-spread loss of supply to the areas supplied by the overhead transmission lines may also be resulted.

When works are carried out in close proximity to the overhead transmission lines, electrical discharge may result when the clearance between the lines and the personnel, or between the lines and the tool/equipment which are held by the personnel are less than the minimum safety clearance. The consequences of the electrical discharge can be as serious as that of direct contact.

5. Safe System of Work

5.1. Planning

During the planning stage of the works, the locations of the overhead transmission towers and the “Sanitary Zone” of the overhead transmission lines should be checked to avoid infringement into the “Sanitary Zone”. The “Sanitary Zone” of the overhead

transmission lines depends on the nature of works to be carried out in accordance with the followings : -

- a. No works shall be carried out below or above the areas covered by the two outermost conductors supported by any transmission towers.
- b. For works at ground level involving only hand held tool with length less than 300 mm, they can be carried out in the working zone outside the two outermost conductors and covered by the 6.7-m boundaries of the overhead transmission lines.
- c. For works at ground level involving machinery with total height measuring from the top of the machinery to ground of more than 1.5 m, the distance between the site boundaries and the overhead transmission lines should be proportional to the height of the highest machinery used in the site. The horizontal distance between the site boundaries and the outermost conductors should be determined by adding 6.7 m to the height of the highest equipment to be used within the work site.
- d. For works involving the use of explosives and any excavation which might affect the tower foundation, the contractor should approach HK Electric for advice.

The above requirements are depicted in Appendix 1 attached to this Practice. If any of the above requirements could not be met, the contractor should commence works only after satisfactory mutual agreements, including coordination of work, construction schedules and the necessary precautionary measures/arrangements, have been made with HK Electric.

The plans showing the “Sanitary Zone” of the overhead transmission lines and the transmission towers can be obtained from HK Electric. All written requests should be addressed to :-

Distribution Planning Department
The Hongkong Electric Co., Ltd.
Hongkong Electric Centre,
44 Kennedy Road,
Hong Kong

The contractor should check against the plans obtained to ensure the requirements as stated above could be complied with during planning stage, before commencement of works and during execution of works.

The plans are prepared as accurately as possible at the time of construction and installation of the overhead transmission lines and towers. However, the contractor should be aware that the alignments of the overhead transmission lines shown on the plans may be different from actual site installations due to the changes in landscape, construction of road works etc. Hence, the contractor is strongly recommended to carry out site inspections before commencement of works.

Under normal circumstances, the plans will be available to the contractor within 14 days upon receipt of the written request by HK Electric.

5.2. Inform HK Electric Representatives

The contractor should notify HK Electric before commencement of works in the vicinity of the overhead transmission lines even if the requirements as stated in Clause 5.1 could be met. The representatives of HK Electric could be contacted 24 hours at 2814 3443.

5.3. Site Meeting

In respect of any works for which the requirements stated in Clause 5.1 cannot be complied with, the contractor should arrange site meeting with HK Electric's representatives. The contractor should clearly explain the type of works intended to be carried out and the works schedule to the HK Electric's representatives.

The contractor may perform the works only after satisfactory mutual arrangements, including coordination of works and construction schedules, have been made between HK Electric and the contractor.

5.4. Considerations During Work

When working in the vicinity of the overhead transmission lines, the following precautions should be exercised by the contractor : -

- a. The metallic objects in close proximity to the overhead transmission lines may be electrically charged due to electrostatic or electromagnetic induction. The contractor should ensure that all metallic objects within the work sites will be properly earthed.
- b. During inclement weather or in the event of the near approach of a lightning storm or typhoon, all works in the vicinity of the overhead transmission lines should cease. Besides, no works should be allowed when the visibility is dangerously impaired.
- c. The clearance between the overhead transmission lines and any object in the works site may change from time to time according to the electricity loading of the lines as well as the swinging angle of the overhead transmission lines, the contractor should therefore review the clearances regularly to ensure at least 6.7-m clearance will be maintained at all points in the work site at all times. The contractor should cease works if at any time it could reasonably be expected that the person performing the works could be moved or be placed within 6.7 m of any overhead transmission lines or that any equipment, part of any tool or material used by that person could be brought within 6.7 m of any overhead transmission lines. Assistance from HK Electric should be sought in case of doubt.
- d. When carrying out tree falling works, the contractor should also take into account of the falling direction of the tree and the clearance of the overhead transmission lines and the tree during falling to ensure clearance of 6.7 m will be maintained at all times.

5.5. Instructions

Clear instructions should be given by the contractor to its/his subordinates, employees or agents working within the works site on the safety precautions and measures to be observed during work. The dangers of direct/indirect contact and its consequences to the overhead transmission lines should be emphasized.

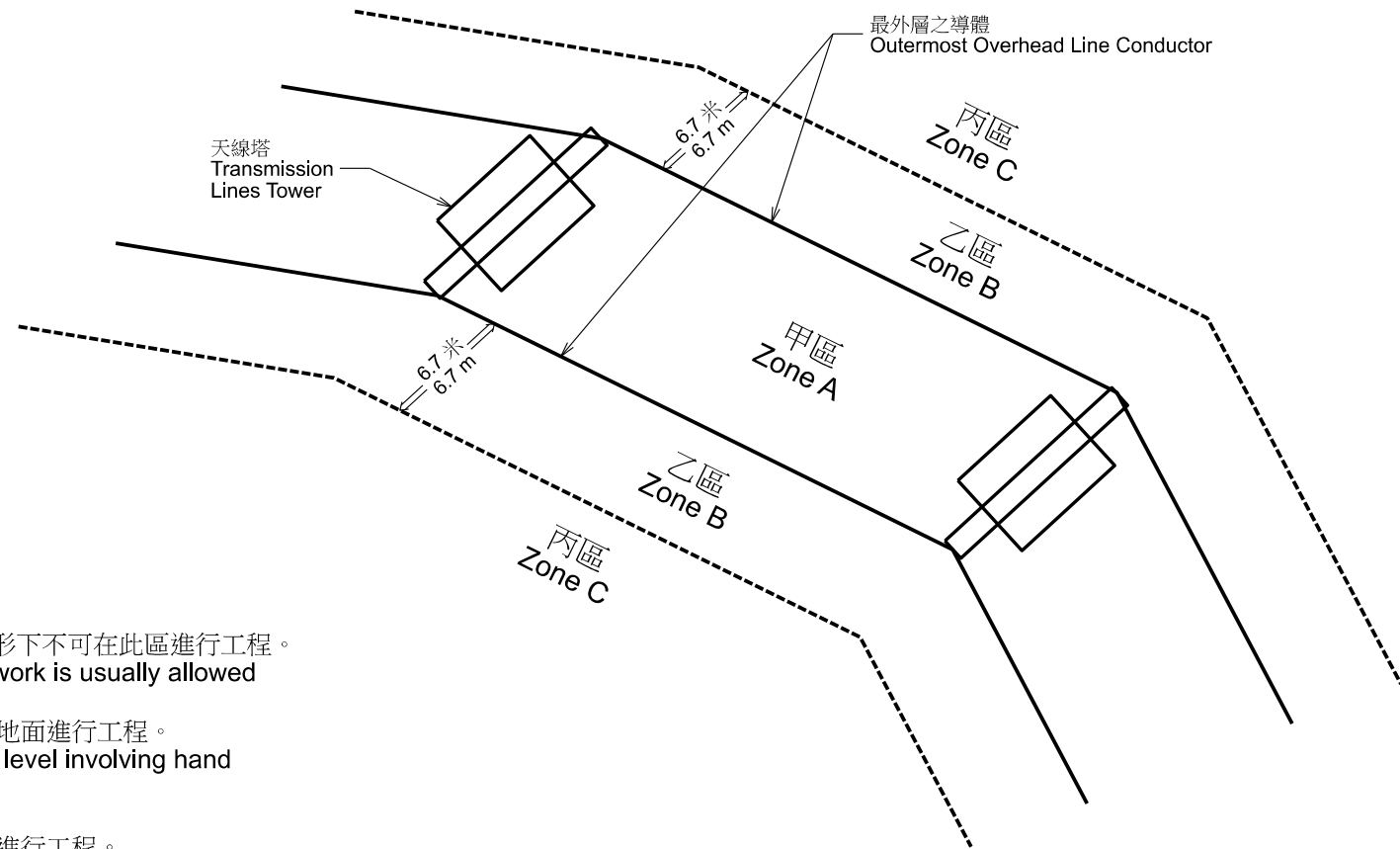
5.6. Periodic/Random Inspection

The contractor should carry out periodic and random inspections to ensure that all its/his subordinates, employees or agents follow the instructions as given in Clause 5.5 above.

5.7. Resolving Site Problems

When site problems arise regarding the requirements as stated in Clause 5.1, HK Electric should be contacted for assistance.

附錄一 Appendix 1



說明：
Legend：

甲區：戒備區域 - 在一般情形下不可在此區進行工程。
Zone A：Sanitary Zone - No work is usually allowed

乙區：只可用手工具在此區地面進行工程。
Zone B：For works at ground level involving hand held tools only

丙區：在此區內可使用機器進行工程。
區域之界限要視乎機器之高度而決定。
Zone C：For works at ground level involving machinery
Boundaries shall be determined according to height of machinery

不准工作區域
No Work Zone

