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BULLETIN 2003-016-EL

APRIL 19, 2007  
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## CLEARANCES FROM THE EXISTING BC HYDRO HIGH VOLTAGE OVERHEAD CONDUCTORS AND TRANSFORMERS

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This Bulletin clarifies requirements of the Canadian Electrical Code, Part I (CE Code) in respect to the clearances of existing BC Hydro high voltage overhead conductors and pole-mounted dielectric liquid-filled transformers to newly constructed or existing buildings.

### BACKGROUND

As the power supply authority, BC Hydro traditionally provided overhead services to its Vancouver customers.

The city has grown substantially in recent years. As a result, there are many **existing** BC Hydro high voltage installations throughout the City, that might conflict with clearance requirements of the current CE Code.

Rule 26-014 of the CE Code requires that dielectric liquid-filled equipment not be located within 6 m of any combustible surface or material on a building, any door or window, or any ventilation inlet or outlet. This Rule, however, allows this equipment to be located within 6 m of any item listed above, provided that "a wall or barrier with non-combustible surfaces or material is constructed between the equipment and that item".

As BC Hydro pole-mounted dielectric liquid-filled transformers already exist on streets and alleys, every newly constructed building or existing building subjected to electrical work associated with additions and alterations has to be evaluated for compliance with the required clearances. This evaluation must be carried out to ensure that a potential explosion of the existing BC Hydro transformers will not adversely affect newly constructed or renovated buildings

Also, Rule 36-110 of the CE Code mandates minimum clearances of the high voltage conductors from the adjacent buildings and structures.

Although Table 33 of the CE Code specifies the minimum 3 m horizontal clearance from such conductors to the buildings, the intent of the CE Code requirement is not limited to purely horizontal measurements; rather it reflects a need to provide a safe means of guarding live parts and exposed conductors from a potential direct or indirect human contact.

Therefore, such safe clearance from the existing high voltage BC Hydro conductors must be evaluated for all newly constructed buildings and buildings subjected to alterations or additions, where application for a permit is necessary.

Clearances from existing BC Hydro high voltage overhead conductors and the above referenced buildings must be also evaluated for conformance with the relevant provisions of the BC Hydro guidelines and standards.

RULING

In order to capture potential clearance concerns and to address them at the design stage, a special checklist (see attached) must be completed and submitted to the Electrical Plan Examination office by the applicant for a development permit.

Where the clearance of the dielectric liquid-filled transformers does not comply with the requirements of the CE Code (ie. is less than 6 m), the Electrical Professional Engineer of record must sufficiently demonstrate that a barrier with non-combustible surface or material is constructed between the existing BC Hydro transformers and windows, ventilation openings or combustible surfaces of the building that are located within 6 m of the transformers.

Where the clearance from the existing BC Hydro high voltage conductors and the existing building that is subjected to an addition or alteration does not meet the provisions of the CE Code, the Electrical Professional Engineer of record must sufficiently demonstrate that either the conductors are isolated by elevation or barriers or that the conductors are adequately relocated to meet the CE Code requirements.

If, however, compliance with the latter condition is not practicable, a request for special permission from the Registered Electrical Professional Engineer of record to relax the required clearances between high voltage conductors and the building may be considered by the Electrical Inspections Branch, provided that the Engineer indicates the building owner=s intent to enter into a legal agreement with the City (Section 219 Covenant).

Such intent must also be reflected on the completed checklist and the Section 219 Covenant must be executed and registered prior to the issuance of an occupancy permit.

(Original signed)

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A.Z. Tsisserev, P.Eng.  
ELECTRICAL SAFETY MANAGER,  
CHIEF ELECTRICAL INSPECTOR & CITY ELECTRICIAN

Attachment

**CHECKLIST FOR CLEARANCES FROM EXISTING BC HYDRO OVERHEAD DIELECTRIC LIQUID-FILLED TRANSFORMERS AND HIGH VOLTAGE CONDUCTORS TO BUILDINGS**

(To be submitted by an Electrical consultant responsible for the project)

1. Rule: 36-110 - for HV overhead conductors
2. Rule: 26-014 - for liquid filled transformers

Project/Property Address \_\_\_\_\_

**1. Rule 36-110 of the CE Code:**

Horizontal distance of BC Hydro overhead conductors

- (a) A newly constructed building or structure
- (b) An existing building or structure
- (c) Is there a conflict of the clearance with CE Code Rule 36-110 in respect to (a) or (b) yes no
- (d) Does the "non-conforming" clearance described in (c) comply with BCH clearance requirements? yes no

**Notes:**

- (i) If the answer to (c) and (d) is "yes", does the owner intend to enter into the legal agreement with the City under section 219 covenant? yes no
- (ii) Actual existing clearance is \_\_\_\_\_m

**2. Rule 26-014 of the CE Code:**

Dielectric liquid filled transformers are located more than 6m from:

- (a) any combustible surface or material on a building yes no
- (b) any door or window yes no
- (c) any ventilation inlet or outlet yes no

**Note:**

The above stated transformer(s) is (are) located within 6m of any item listed in (a), (b) and (c) above; however, a non-combustible wall or barrier will be constructed between the transformer and that item. yes no

Consultant's Name \_\_\_\_\_ P.Eng.

Consultant's Signature \_\_\_\_\_

Date \_\_\_\_\_