

BULLETIN 2015-002-AD/EL

March 20, 2015

Clearances from the Existing BC Hydro High Voltage Overhead Conductors and Transformers

The Canadian Electrical Code, Part I (CE Code) contains minimum safe clearance requirements for the high voltage overhead conductors and dielectric liquid-filled transformers, this bulletin clarifies that it is necessary to identify and evaluate the clearances from existing BC Hydro high voltage overhead conductors and pole-mounted dielectric liquid-filled transformers for newly constructed buildings or buildings subjected to Construction¹ only for work impacting area near conductor and transformer in the City of Vancouver.

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 building being altered has to be evaluated for compliance with the required clearances. This evaluation must be carried out to ensure that a risk of explosion to the existing BC Hydro transformers will not adversely affect the adjacent buildings.

Also, Rule 36-110 of the CE Code mandates minimum clearances of 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 Construction.

Clearances from both existing BC Hydro high voltage overhead conductors and pole-mounted dielectric liquid-filled transformers to any buildings must be also evaluated for conformance with the relevant provisions of the BC Hydro guidelines and standards.

DB, DE and BU Permits Submission Requirements

1. In order to capture potential clearance concerns and to address them, a special checklist (see attached) must be completed and submitted to the Electrical Plan Examination office by the applicant for a development permit and building permit.
2. Where the clearance of the dielectric liquid-filled transformers does not comply with the requirements of the CE Code (i.e. is less than 6 m), the Registered Professional of record must demonstrate that a barrier with non-combustible surface or material is constructed between the existing BC Hydro transformers and doors, windows, ventilation openings or combustible surfaces of the building that are located within 6 m of the transformers. Where compliance with this condition is not practicable, a solution must be sought from BC Hydro.
3. Where the clearance from the existing BC Hydro high voltage conductors and the newly constructed building or building that is subjected to Construction does not meet the provisions of the CE Code, the Registered Professional of record must demonstrate that either the conductors are isolated by elevation or barriers or that the conductors are adequately relocated to meet the CE Code requirements. Where compliance with this condition is not practicable, a solution must be sought from BC Hydro.
4. For building that is subjected to an alteration where compliance with the above condition 2 is not practicable, a request for variance from the Registered Professional of record to relax the required clearances between the existing BC Hydro transformers and doors, windows, ventilation openings or combustible surfaces of the building may be considered by the Electrical Inspections Branch, provided that the proposed alternative meets the fundamental safety objectives of the CE Code requirements.
5. For building that is subjected to an alteration where compliance with the above condition 3 is not practicable, a substantiated request for special permission from the Registered Professional of record to relax the required clearances between high voltage conductors and the building may be considered by the Electrical Inspections Branch, provided that a legal agreement (Section 219 Covenant) is completed with the property owners to the satisfaction of the City.
6. The foregoing requirements 1, 2, 3, 4, and 5 shall be met prior to issuance of DB, DE and BU permits. Where a special permission to retain a nonconforming clearance is granted for the purpose of a legal agreement (Section 219 Covenant) as described in condition 5, the Section 219 Covenant must be executed and registered prior to the issuance of an occupancy permit.

(Original signed by)

P. Ryan, M.Sc., P.Eng.
Chief Building Official
Director, Building Code and Policy

(Original signed by)

W. White
Deputy City Electrician
Manager, Trades Inspection

Attachment

Checklist for

Clearances from Existing BC Hydro Overhead Dielectric Liquid-filled Transformers and High Voltage Conductors to Buildings / Developments

This checklist is required to be completed by a qualified person familiar with the construction; the electrical equipment and hazards involved.

Note:

- (a) To be completed by a Registered Professional - Electrical Engineer retained to undertake electrical design under electrical permit.
- (b) Where (a) is not possible or feasible, to be completed by an architect, electrical consultant, electrical contractor or qualified designer.

Date: _____

Project/Site Address: _____

DP/BP/DB Permit No.: _____

Yes No N/A

 (1) The clearance from the existing BC Hydro high voltage conductors has been evaluated and safe clearance will be provided for the new development / construction / building in accordance with Bulletin 2015-002-AD/EL.

 (2) The clearance from the existing BC Hydro pole-mounted dielectric liquid-filled transformer(s) has been evaluated and safe clearance will be provided for the new development / construction / building in accordance with Bulletin 2015-002-AD/EL.

If any part of your development, construction or building is planned in proximity to the existing BC Hydro electrical works (e.g. it is intended to be within 3m of a property line that abuts a street or lane), please contact BC Hydro and request information regarding BC Hydro works adjacent to the property. It is important to ensure any potential impact or risks from your proposed development, construction or building will be assessed and addressed.

Due to the possibility of severe hazard of electrical shock or fire, unqualified persons must not attempt to measure the distances.

Company

Email

Telephone/Cell Phone Number(s)

Name

Signature (Affix Professional Stamp here)