
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.

¹ Construction includes erection, alteration, enlargement, addition of a building related to the work impacting area near conductor and transformer that could create an unsafe condition.

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.

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Attachments 1-2

For Part 3 Buildings - Attachment #1 to Bulletin 2015-002-AD/EL

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)

Date: _____

Project/Property Address: _____ DB/DE/BU Permit: _____

1. Rule 36-110 of the CE Code:

Horizontal distance of BC Hydro overhead conductors

- (a) A newly constructed building or structure
- (b) A building or structure that is subjected to Construction
(Construction means, with respect to a building: erection, alteration, enlargement, addition)
- (c) Is there a conflict of the clearance with CE Code Rule 36-110 in respect to (a) or (b)? yes no n/a*
- (d) If the answer to (c) is "yes", will the conductors be adequately relocated to meet the CE Code requirements, as described in Item #3 of this bulletin? yes** no***

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 n/a****
- (b) any door or window yes no n/a****
- (c) any ventilation inlet or outlet yes no n/a****

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. (a) yes no

(b) Compliance with above condition is not practicable, request for variance yes***** no n/a
Consultant's Name _____ P.Eng.

Consultant's Signature _____ Company: _____

E-mail: _____ (Affix Professional Stamp Here.) Telephone: _____

Where the building permit is under the CP program, checklist shall be provided with the CP stamp as well.

Notes:

- * - No BC Hydro overhead conductor is located in the proximity of the evaluated building.
- ** - If the answer to (d) is "yes", provide documented confirmation by BC Hydro.
- *** - If the answer to (d) is "no", no permit issuance shall be granted if the applicable requirements of Item #6 of this bulletin are not met.
- **** - No BC Hydro transformer is located in the proximity of the evaluated building.
- ***** - Only applicable to Item #4 of this bulletin.

BC Hydro contact information: General Distribution voltage (<34KV) safety or connection inquiries may be made to 1-877-520-1355.
General Transmission voltage (69KV to 500KV) safety inquiries and general property or right of way inquiries may be sent to properties.helpdesk@bchydro.com or you may contact the Property Rights Services department at 604-623-3637 or toll free 1-800-667-1517.

For Part 9 - Small Buildings Attachment #2 to Bulletin 2015-002-AD/EL

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

(To be completed by "where applicable" an electrical consultant, licensed electrical contractor, architect or qualified designer responsible for the project of Part 9 Buildings. i.e. Laneway House, Infill One-Family Dwelling, Infill Two-Family Dwelling or Infill Multiple Dwelling)

Date: _____

Project/Property Address: _____ DB/DE/BU Permit: _____

1. Rule 36-110 of the CE Code:

Horizontal distance of BC Hydro overhead conductors

- (a) A newly constructed building or structure
- (b) A building or structure that is subjected to Construction
(Construction means, with respect to a building: erection, alteration, enlargement, addition)
- (c) Is there a conflict of the clearance with CE Code Rule 36-110 in respect to (a) or (b)? yes no n/a*
- (d) If the answer to (c) is "yes", will the conductors be adequately relocated to meet the CE Code requirements, as described in Item #3 of this bulletin? yes** no***

2. Rule 26-014 of the CE Code:

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

- (a) any combustable surface or material on a building yes no n/a****
- (b) any door or window yes no n/a****
- (c) any ventilation inlet or outlet yes no n/a****

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. (a) yes no

(b) Compliance with above condition is not practicable, request for variance yes***** no n/a

Name _____ Signature _____

(electrical consultant / licensed electrical contractor / architect / qualified designer)

Telephone: _____ E-mail: _____ Company: _____

(If Applicable - Affix Professional Stamp Here.)

Notes:

* - No BC Hydro overhead conductor is located in the proximity of the evaluated building.

** - If the answer to (d) is "yes", provide documented confirmation by the power supply authority.

*** - If the answer to (d) is "no", no permit issuance shall be granted, if the applicable requirements of Item #6 of this bulletin are not met.

**** - No BC Hydro transformer is located in the proximity of the evaluated building.

***** - Only applicable to Item #4 of this bulletin.

BC Hydro contact information: General Distribution voltage (<34KV) safety or connection inquiries may be made to 1-877-520-1355.

General Transmission voltage (69KV to 500KV) safety inquiries and general property or right of way inquiries may be sent to properties.helpdesk@bchydro.com or you may contact the Property Rights Services department at 604-623-3637 or toll free 1-800-667-1517.