

August 20, 2014

VAR-CEC-2-024 [rev-6]

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VARIANCE

Canadian Electrical Code

SUBJECT: Rule 2-024 – RE: Liquid-filled Transformers

Preamble

Rule 2-024 requires that electrical equipment be approved. The definition of ‘approved’ in the Canadian Electrical Code does not apply because Alberta regulation has otherwise defined it. In Alberta, section 2 of the Electrical Code Regulation defines ‘approved’ as follows:

Electrical systems equipment

- 2(1)** If a code, standard or body of rules declared in force under the Act with respect to electrical systems requires approved equipment, that equipment must meet the requirements of this section.
- (2)** No person shall manufacture, install, sell or offer for sale any equipment related to electrical systems for use in Alberta unless the equipment has been
- (a) certified by a certification body in accordance with the certification body’s terms of accreditation with the Standards Council of Canada, or
 - (b) inspected by an inspection body in accordance with the inspection body’s terms of accreditation with the Standards Council of Canada.
- (3)** Subsection (2) does not apply to electrical equipment of an electric distribution system or a transmission line as defined in the *Hydro and Electric Energy Act*.

(Note: “certification body” is defined as ‘an organization accredited by the Standards Council of Canada as a certification body;’ and “inspection body” is defined as ‘an organization accredited by the Standards Council of Canada as an inspection body.’)

There is seldom occasion where we cannot meet this requirement. Situations do exist however, where the requirement may be onerous or impracticable.

In the specific situation of liquid-filled transformers, certification organizations have yet to identify a demand for developing a product certification program around this particular electrical equipment. Consequently, certified liquid-filled transformers are not available.



Issue of this STANDATA is authorized by
the Chief Electrical Administrator

[Original Signed]
Clarence C. Cormier, P.Eng.



SAFETY CODES COUNCIL

Conditions

Owners/users required to use liquid-filled transformers are permitted to deviate from Rule 2-024 of the Canadian Electrical Code provided they meet the following conditions.

1. a) Manufactured to Canadian Standards

Liquid-filled transformers are acceptable when the manufacturer declares that they have manufactured, inspected and tested the transformer to the requirements of the appropriate and current Canadian standards. These standards include but are not limited to:

- CAN/CSA-C2 Single Phase and Three Phase Distribution Transformers
- CAN/CSA-C88 Power Transformers and Reactors
- CAN/CSA-C227.3 Low Profile, Single Phase, Dead Front Pad-mounted, Distribution Transformers
- CAN/CSA-C227.4 Three Phase, Dead Front Pad-mounted, Distribution Transformers

b) Manufactured to Other than Canadian Standards

Where liquid-filled transformers are manufactured to other than Canadian standards, the manufacturer must declare that the product has equivalent safety performance as one manufactured to Canadian standards. Alternatively, a licensed engineering professional may evaluate and accept the product standard to which the liquid-filled transformer was manufactured if it compares favourably with the appropriate Canadian standards concerning safety performance.

2. Product Identification

In addition to meeting the requirements of Rule 2-100 of the Canadian Electrical Code, the liquid-filled transformer must identify the standard to which it was manufactured.

The following documentation or appropriate marking must also accompany the product:

- a manufacturer's declaration stating that they have manufactured the product to one or more appropriate Canadian standards, or
- when manufactured to other than Canadian standards:
 - i. a manufacturer's declaration that the product has equivalent safety performance as one manufactured to the appropriate Canadian standards, or
 - ii. a licensed engineering professional's evaluation report indicating the product as having equivalent safety performance as one manufactured to appropriate Canadian standards.

3. Maintenance

The owner of the equipment shall ensure the product is maintained to industry standards and manufacturer's specifications.

4. Expiry

To ensure that this variance is reviewed for ongoing relevancy and necessity, with the opinion that it may be reissued in its present or an amended form following a review, this variance expires on March 31, 2017.