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SaskPower Electrical Inspections

BULLETIN 02-2017

Dec 15, 2017

TO: **LICENSED ELECTRICAL CONTRACTORS**
ELECTRICAL CONSULTANTS AND ENGINEERS

SUBJECT: GENERAL BULLETIN, 2018 CANADIAN ELECTRICAL CODE CHANGES, AND ELECTRIC SERVICE REQUIREMENT CHANGES OR ADDITIONS

Item #1 – Superseded Bulletins and Information Items

This Bulletin supersedes Item #3 & Item #6 of Bulletin 01-2017 with Item #2 and Item #3 of this bulletin.

The information contained herein is to be used in conjunction with the 2015 Canadian Electrical Code, Part 1, C22.1-15, and may be amendatory of the 2015 Saskatchewan Interpretations.

Please contact your local Electrical Inspector if you have concerns or questions.

Item #2 – Limiting Current Output (Choking) of a Dry Type Transformers 750 V or Less, CEC Rule 26-256

If the secondary conductors or equipment connected to the secondary of the transformer are less than 1.25 x the transformer's rated secondary current, but equal to or greater than the primary overcurrent (OC) multiplied by the transformers turns ratio, secondary OC protection is not required. **The primary OC device shall be labelled to indicate the maximum rating of the OC protection**.

Item #3 – Excerpt from 2018 CEC Rule 8-104(5),(6),(7) & (8), & 2-100

Rule 8-104(5),(6),(7) & (8) – Maximum Circuit Loading,

The original wording can be replaced with the following from August 2016 Memorandum of Revision;

(5) Where a fused switch or circuit breaker is marked for continuous operation at 100% of the ampere rating of its overcurrent devices, the continuous load as determined from the calculated load shall not exceed the continuous operation marking on the fused switch or circuit breaker; and

(a) Except as required by item (b), shall not exceed 100% of the allowable ampacities of the conductors selected in accordance with Section 4; or

(b) shall not exceed 85% of the allowable ampacities of single conductors selected in accordance with Section 4.

(6) Where a fused switch or circuit breaker is marked for continuous operation at 80% of the ampere rating of its overcurrent devices, the continuous load as determined from the calculated load shall not exceed the continuous operation marking on the fused switch or circuit breaker; and

(a) Except as required by item (b), shall not exceed 80% of the allowable ampacities of conductors selected in accordance with Section 4; or

(b) shall not exceed 70% of the allowable ampacities of single conductors selected in accordance with Section 4.

Note - Subrules (7) & (8) are deleted

2-100 – Marking of equipment

Where the **Maximum Continuous Load** allowed on a fused switch or circuit breaker as determined from rule 8-104(5)&(6) is less than the continuous operating marking of the fused switch or circuit breaker, a permanent, legible caution label shall be installed adjacent to the circuit breaker to indicate the maximum continuous load permitted. **Labels shall be white lettering 9.5mm in height on a red background**

This label will now be required at the main breaker where the selection of service or feeder conductors is in accordance with Table 39.

Item #4 –Excerpt from 2018 CEC Rule 10-004, 10-100, 10-210, 10-500, 10-614, - see New Table 16 & New Figure 3 & Figure 3a

10-004 Special Terminology (see Appendix B)

Equipotentiality – the state in which conductive parts are at a substantially equal electric potential

System bonding jumper — a connection between the system grounded point and the non-current-carrying conductive parts of the electrical system to establish a solidly grounded system.

10-100 Current over grounding conductors (see Appendix B)

There shall be no objectionable passage of current over a grounding conductor. For the purpose of this rule, neutral current is considered to be 'objectionable' current.

10-210 Grounding connections for solidly grounded ac systems supplied by the supply authority (see Appendix B)

The grounded conductor of a solidly grounded ac system supplied by the supply authority shall

(a) be connected to a grounding conductor **at one point only** at the consumer's service;

(b) have a minimum size as specified

(i) for a bonding conductor; and

(ii) for a neutral conductor when the grounded conductor also serves as a neutral;

(c) be connected to the equipment bonding terminal by a system bonding jumper; and

(d) have no other connection to the non-current-carrying conductive parts of electrical equipment on the supply side or the load side of where the grounding connection is made.

10-500 Current over bonding conductors (see Appendix B)

There shall be no objectionable passage of current over a bonding conductor. For the purpose of this rule, neutral current is considered to be 'objectionable' current.

10-614 Size of system bonding jumper or bonding conductor (see Appendix B)

1) The size of a field-installed system bonding jumper shall not be less that that determined by the application of Table 16 based on the ampere rating or setting of the overcurrent device protecting the ungrounded conductors.
2) The size of the bonding conductor installed in accordance with rule 10-604 at service equipment shall not be less than that determined by the application of Table 16 based on the allowable ampacity of the largest ungrounded conductor.
3) The size of a field-installed bonding conductor installed at other than service equipment shall not be less than that determined by the application of Table 16 based on
   a) the overcurrent device protecting the ungrounded conductors; or
   b) the allowable ampacity of the largest ungrounded conductor for installations where the size of the circuit conductors is increased to compensate for voltage drop.
4) The size of a field-installed bonding conductor installed with each group of parallel conductors run in separate raceways or cables, shall be in accordance with Subrule (3) divided by the number of groups of parallel conductors.
5) Notwithstanding Subrules (2), (3) and (4), the bonding conductor shall not be required to be larger than the current-carrying conductors.
6) A metal raceway that is permitted to be used as a bonding conductor shall be considered to meet the requirements of this rule.
7) A bonding means that is integral to a cable assembly shall be considered to meet the requirements of this rule.

Table 16
Minimum size of field-installed system bonding jumper and bonding conductor
(see Rule 10-614 as above)

Ampere Rating or setting of overcurrent device protecting conductor(s), equipment, etc. Not Exceeding	Allowable Ampacity of largest ungrounded conductor or group of conductors. Not exceeding	Minimum size of system bonding jumper and bonding conductor			
		Wire		Bus	
		Copper (AWG or kcmil)	Aluminum (AWG or kcmil)	Copper (mm^2)	Aluminum (mm^2)
20		14	12	2.0	3.5
30		12	10	3.5	5.5
60		10	8	5.5	8.5
100		8	6	8.5	10.5
200		6	4	10.5	21.0
300		4	2	21.0	26.5
400		3	1	26.5	33.5
500		2	0	33.5	42.5
600		1	00	42.5	53.5
800		0	000	53.5	67.5
1000		00	0000	67.5	84.0
1200		000	250	84.0	127.0
1600		0000	350	107.0	177.5
2000		250	400	127.5	203.0
2500		350	500	177.5	253.5
3000		400	600	203.0	355.0
4000		500	800	253.5	405.5
5000		700	1000	355.0	507.0
6000		800	1250	405.5	633.5

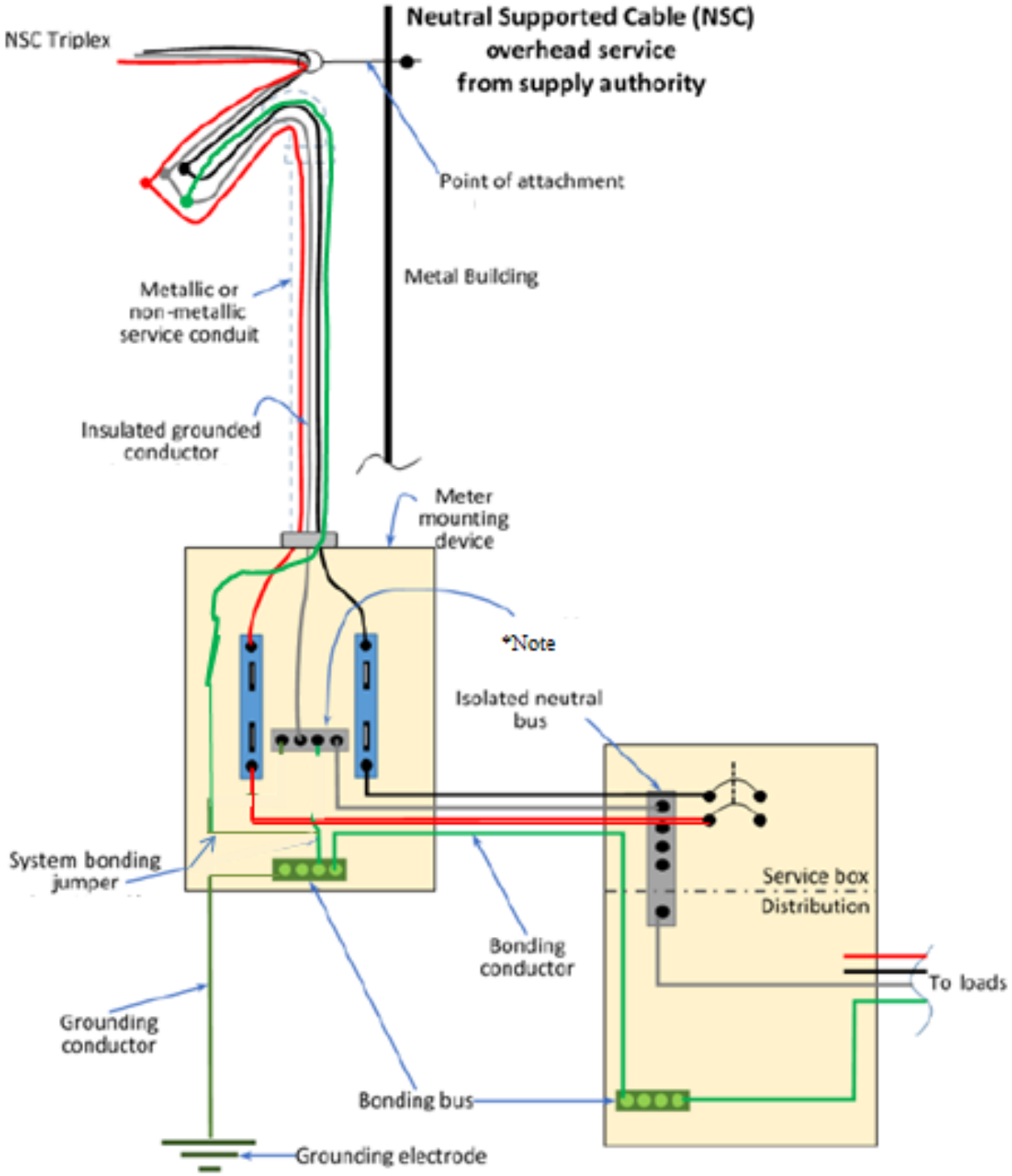

Figure 3

*Note - This method shall be used when an isolated neutral is available for the meter socket

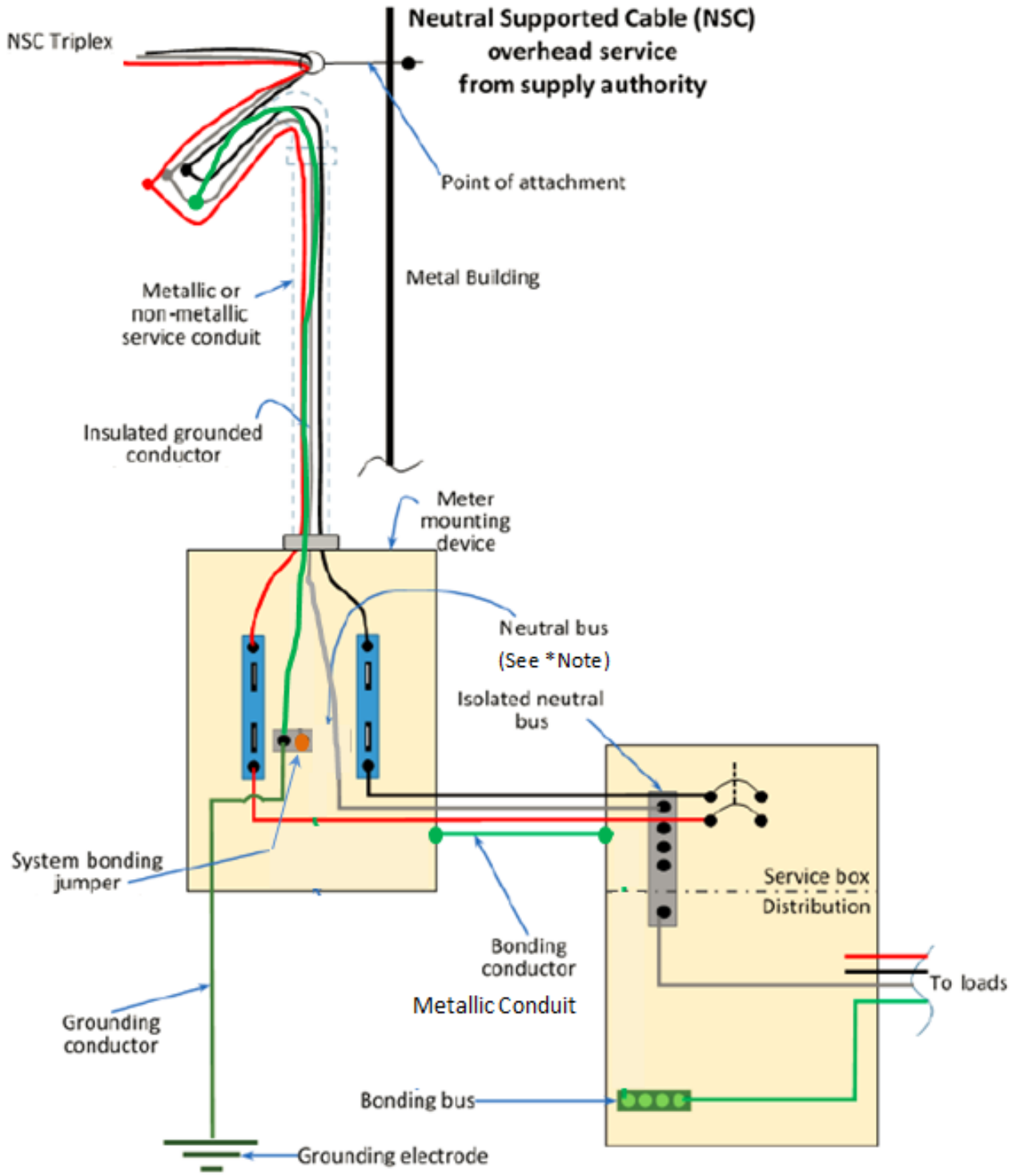

Figure 3a

*Note – This method may be used when an older style (round or square) meter socket without the isolated neutral is used or reused

Item #5 –Granular Fertilizer Storage, CEC Rule 22-202

All electrical equipment installed for bulk granular fertilizer storage buildings, bins, load and unload equipment, distribution chutes and augers and surrounding exterior areas, subject to corrosion under normal operation of the equipment from a combination of the fertilizer dust and humidity/moisture, must be approved for the location in accordance with Rule 2-116. Protection from corrosion may include cold shrink coverings, use of aluminum, 304 stainless steel or equivalent bolts, screws, struts etc. Non-essential equipment shall not be installed in handling or processing areas.

Cadmium Plating and Galvanized coatings are not considered corrosion resistant in these environments

Raceways shall be PVC, or aluminum, with fittings and enclosure entries of such design as to not constitute dissimilar metals in contact with each other, and to exclude dust.

Teck 90 cable with non-corrosive fittings shall be permitted to be installed in bulk fertilizer storage structures.

Equipotential grounding and bonding conductors shall be of copper or equivalent and insulated where exposed to corrosion. Any terminations shall be protected from corrosion by an approved sealant or epoxy paint.

Please contact your local inspector for a site inspection if required.

Item #6 – Tamper Resistant Receptacles in other than dwelling units CEC Rule 26-700(12)

All receptacles of CSA configuration 5-15R and 5-20R shall be tamper-resistant and shall be so marked, when such receptacles are installed in:

a) Child care facilities
b) Guest rooms and guest suites of hotels and motels; or
c) Pre-schools and elementary education facilities.

The shared areas in joint facilities which may be accessed by children up to elementary school age, shall also require tamper-resistant receptacles. Please check with the Inspection department if further clarification is required.

Portable class rooms shall be built with TR receptacles if attached to or intended for an elementary school. Relocated portables shall dealt with on a case by case basis however if the wiring requires maintenance due to wear and tear, the receptacles shall be made to comply.

Item #7 – Receptacles for Maintenance of Equipment on Rooftops, CEC Rule 26-704

A receptacle is now required, for maintenance purposes, on all commercial or industrial buildings that have rooftop electrical equipment such as RTU's, ventilation, solar panels, etc.

A receptacle that is an integral part of the rooftop unit meets the intent of this rule.

Replacement of a rooftop unit **will not** require an upgrade to meet the intent of this rule.

Item #8 – Arc-Fault Protection in Detached Garages or Out Buildings, CEC Rule 26-724

Where a branch circuit feeds receptacles (rated 125 volt, 20 amps or less) that are associated with but outside the dwelling unit such as in a yard, accessory building or detached garage, AFCI protection as described in 26-724 (f) and (g) **is not required**.

Item #9 – Underground Consumer's Services on New Housing, CEC Rule 6-300

6-300 - Underground Consumer's Services on New Housing

Caution must be taken by the Electrical Contractor when installing a customer owned underground service from the meter socket to the panel location.

The consumer's underground cable must be installed tight to the basement wall anywhere within 1.5 meters of the meter socket location. This will prevent the cable from being damaged when the utility trenches in their underground service cable from the pole or pedestal to the socket. Once the cable is past the 1.5 meter distance, it may then be installed out away from the basement wall.

If being installed prior to backfilling the cable shall be taken down to undisturbed soil just above or below the weeping tile in 150mm of sand or in conduit to protect it from damage and settling during back fill.

As per 12-012(11) & (12), the installation will also require frost sleeves at both ends and marking tape must be installed in the cable trench.

Underground service entrance cable as described in Table 19 shall be allowed to be supplied from a branch circuit overcurrent device when used as an underground feeder.

Item #10 – SaskPower Electrical Inspections Registered Contractor Program

Electrical contractors can now take advantage of a 10 per cent discount for electrical permits!

To improve and maintain safety and consistency of electrical installations, SaskPower is introducing the Registered Electrical Contractor Program to Saskatchewan. The Program will reward electrical contractors who demonstrate a one year cycle of permitting with the discount.

How Do I Qualify?

- Participate in a continuing education program under the umbrella of the Electrical Contractors Association of Saskatchewan;
- Maintain a defect ratio of four per cent or below on all inspected permits and have a minimum of 20 inspected permits per year;
- Have no incidents of unreported work and disclose all information related to the electrical installation/permit;
- Take out online permits only; and
- Correct any defects within the date of expiry and have no incidents of bond action (an incident of bond action will result in the immediate loss of status).

How Does It Work?

- Beginning Jan. 1, 2018, contractors will have their history tracked to verify that all requirements have been met;
- Successful contractors will be notified in November 2018 that they have achieved Registered Contractor Status;
- Once a contractor has reached registered status, the 10 per cent rebate is applied to all permits starting Jan. 1, 2019; and
- Contractors will be required to meet the standards annually to remain a Registered Contractor and will continue to have their history tracked.

Inquiries

Contact Scott Mccorriston at 306-566-2516 or Rod Pack at 306-934-7720 for more information.

Item #11 – Unreported Work Penalty – Electrical Inspections Regulation

The Electrical Inspection regulation has been changed and the un-reported work penalty has been increased from $250 to $2500.

Maximum penalty
The maximum amount of a penalty that may be imposed pursuant to section 28.2 of the Act for performing work of electrical installation without a permit is $2,500 for each item of work performed without a permit.

Item #12 – Energization Stickers

As a reminder, energization stickers shall not be applied to any meter socket unless **a paid Electrical Permit has been obtained for the service.**

Failure to comply with the specific requirements listed for the application of energization stickers by the Electrical Contractor, will result in fines and penalties being assessed against the contractor.

Provided by the Electrical Inspections Offices of SaskPower