SaskPower
Powering the future®

SaskPower Electrical Inspections

BULLETIN 01-2017

February 15, 2017

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

SUBJECT: GENERAL BULLETIN, 2015 SASK INTERPRETATIONS CORRECTIONS, AND ELECTRIC SERVICE REQUIREMENT CHANGES OR ADDITIONS

Item #1 – Superseded Bulletins and Information Items

This Bulletin supersedes all previous issued Bulletins.

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 – Supplementary Protectors, CEC Rule14-114

Inspectors have encountered supplemental protectors being used as overcurrent devices in industrial control panels and other electrical applications. As a reminder to industry and per Rule 14-114 of the 2015 Canadian Electrical Code, Part 1, supplementary overcurrent protection shall not be used as a substitute for branch circuit overcurrent devices or in place of branch circuit protective devices to protect a circuit.

Item #3 – 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, secondary overcurrent (OC)protection is required. See CEC Handbook and rule 14-606(2) for exemption. Primary OC device shall be labelled to indicate the maximum rating of the OC protection.

Item #4 – Portable Temporary Power Solar Generation Units, CEC Rule 2-024

Solar powered generating units, used for temporary construction power or lighting are required to be approved to a CSA standard by a Saskatchewan recognized Certification Body as per the 2015 Saskatchewan Interpretations.

Item #5 – Disconnects and Bonding Requirements for Oil Well Sites, CEC Rules 10-200 and 14-100

Except for extra low voltage sites (i.e. 12 Volt DC), each oil well site or string of wells, shall be provided with a service entrance rated single point of disconnect and the feeder conductors shall also include a bond conductor sized to Table 16A to safely conduct any fault current back to the source and to ensure the safe operation of the overcurrent devices.

Item #6 – Adoption of 2018 CEC Wording – Maximum Circuit Loading, CEC Rule 8-104(5),(6) & (8)

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

(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
(a) Except as required by item (b), 100% of the rating of the circuit, where the allowable ampacities of conductors are selected in accordance with Section 4; or
(b) 85% of the rating of the circuit, where the allowable ampacities of single conductors are 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
(a) Except as required by item (b), 80% of the rating of the circuit, where the allowable ampacities of conductors are selected in accordance with Section 4; or
(b) 70% of the rating of the circuit, where the allowable ampacities of single conductors are selected in accordance with Section 4.

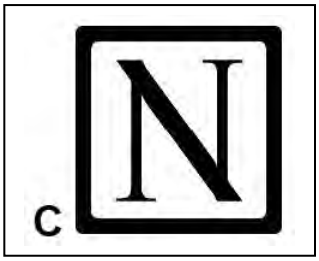
(8) deleted

Item #7 – Corrections to the 2015 Saskatchewan Interpretations

2-014 - Plans and Specifications
Please visit www.saskpower.com for the new 'Renewables Information Check Sheet'. This form must be completed and submitted with all renewable energy installation plans.

2-024 - Use of Approved Equipment
The approval label for Nemko has changed. Effective immediately the new Nemko symbol will be accepted. All new equipment approved for use in Canada will have one of these symbols. While some products will continue to display the older symbol, it is still accepted but has been discontinued. They will also now be known as NEMKO North America with their head office located in Ottawa, Ontario.

These are the newest marks:



Nemko North America Inc.
Nemko, Canada
303 River Road
Ottawa, Ontario, Canada
K1V 1H2
Off (613) 737-9680 Fax (613) 737-9691

14-104(1) - Adjustable Overcurrent Devices

a) Where the cable ampacity is less than the maximum rating of the **adjustable overcurrent (OC) protection devices**, the trip settings for the OC protection device shall be documented and on-site for the inspection when available;
b) The adjustable OC protection devices including fused disconnecting switches, shall be labelled with a lamacoid plate indicating maximum fuse size or AT (Amp Trip) following the cable ampacity as per Rule 4-004, lamacoid shall read "**Max _____A; Do Not Adjust**"; and
c) Service, feeder and/or branch circuit conductor ampacity markings **shall also** be required.

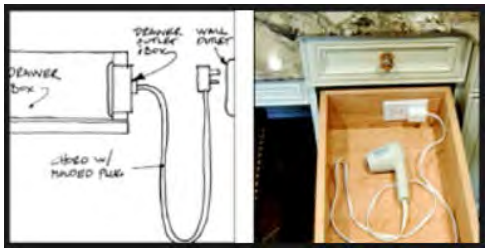
24-000 - Classification of Areas

Patient Care Areas are defined by the CAN/CSA-Z32 standard and include, but are not limited to, walk-in medical clinics, dental clinics, chiropractic clinics, **massage therapy**, optometrists and others. The CEC definition of a health care facility was changed to recognize that more and more treatment and testing, previously done in hospitals, is now being done in these facilities and even at home. This means that the specific rooms of a clinic in which treatment is given must be wired in accordance with Section 24 methods.

Home dialysis equipment, as an example, will require a single receptacle on a separate circuit wired as per section 24. The receptacle shall be clearly labelled as to its purpose and exempted from arc fault protection under 26-724(f).

26-710(h) - Receptacles Installed in Drawers

Receptacles installed in drawers for appliances such as USB chargers, hair dryers, curling irons, food processors, etc. s**hall be approved as part of the assembly and power shall be disconnected from the receptacle as soon as the drawer begins to close.** Circuit shall be AFCI protected and if located within 1.5m of a sink, bath tub or shower stall it shall be GFCI protected. Receptacles shall be tamper resistant.



26-724 - Branch Circuits for Dwelling Units

Arc fault protection as defined in Rule 26-720 is required for all branch circuits in new construction or renovations/additions of dwelling units. Except for receptacles listed in Rule 26-724(f) which includes:

a) Bathroom receptacles as per Rule 26-710(f)
b) Refrigerator receptacles
c) Kitchen **counter** receptacles
d) Island receptacles
e) Peninsula receptacles
f) A single receptacle for a sump pump**/septic pump/condensate pumps** that does not supply any other receptacles.

A dwelling unit with permanently installed cooking facilities (i.e. gas or electric range, cooktop) is deemed to have a cooking facility and thus requires arc fault protection.

An "outlet branch circuit type arc fault circuit interrupter" may be used (instead of an AFCI breaker) when installed as per Rule 26-724(g).

Newly constructed rooms require all receptacles to be arc fault protected, and receptacles added to an existing room shall also require arc fault protection.

Cord connected hot plates and/or microwaves do not constitute a cooking facility.

28-104(1) - Motor Supply Conductor Insulation Temperature

Supply conductors to a motor connection box shall have an insulation temperature rating equal to or greater than that required by Table 37 (example: heating circulating pumps, automotive car lifts).

When there is a discrepancy between the manufacturer and the values in Table 37, the higher value shall be used **unless the motor is otherwise marked.**

Section 64 – Renewable Energy Drawings

The renewable energy drawings have been updated to show the new grounding and bonding methods as well as to display all the correct code rules and information.

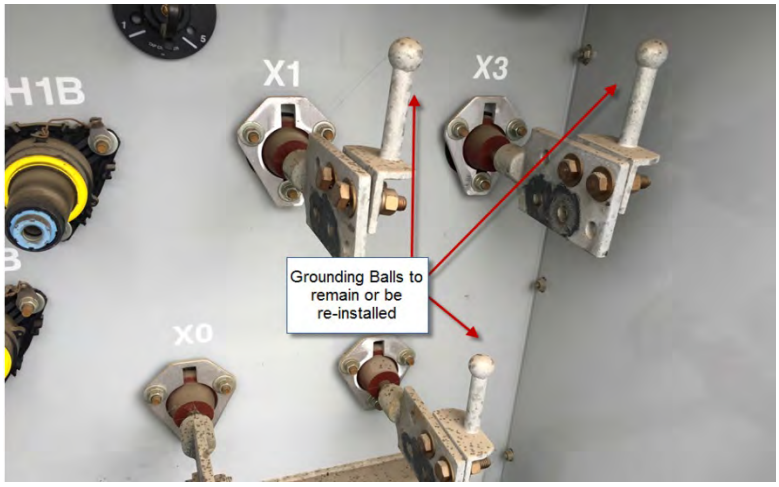
Please review the three attached **drawings dated November 2016.**

Item #8 – SaskPower Electric Service Requirements

Utility Transformer Grounding Balls, SaskPower Electric Service Requirements, 2.3.3

Contractors terminating customer cables onto the utility transformer paddles are reminded that they are to ensure that the grounding balls are left in place or re-installed at the completion of the installation.
See attached photo

Grounding Balls



Item #9 – SaskPower Electric Service Requirements
Use of 400A Self-Contained Meter Sockets

SaskPower will be limiting the use of the 400 A self-contained meter sockets in urban, commercial, and residential applications. The 400 A self-contained meter socket limits the ability of SaskPower operating staff to isolate metering for individual customer installations. There will be several alternate options for 400 A urban commercial services. Please coordinate installation with SaskPower District staff prior to installation.

Item #10 – SaskPower Electric Service Requirements
Meter Marking Requirements in Commercial Rental Units (CRU's)

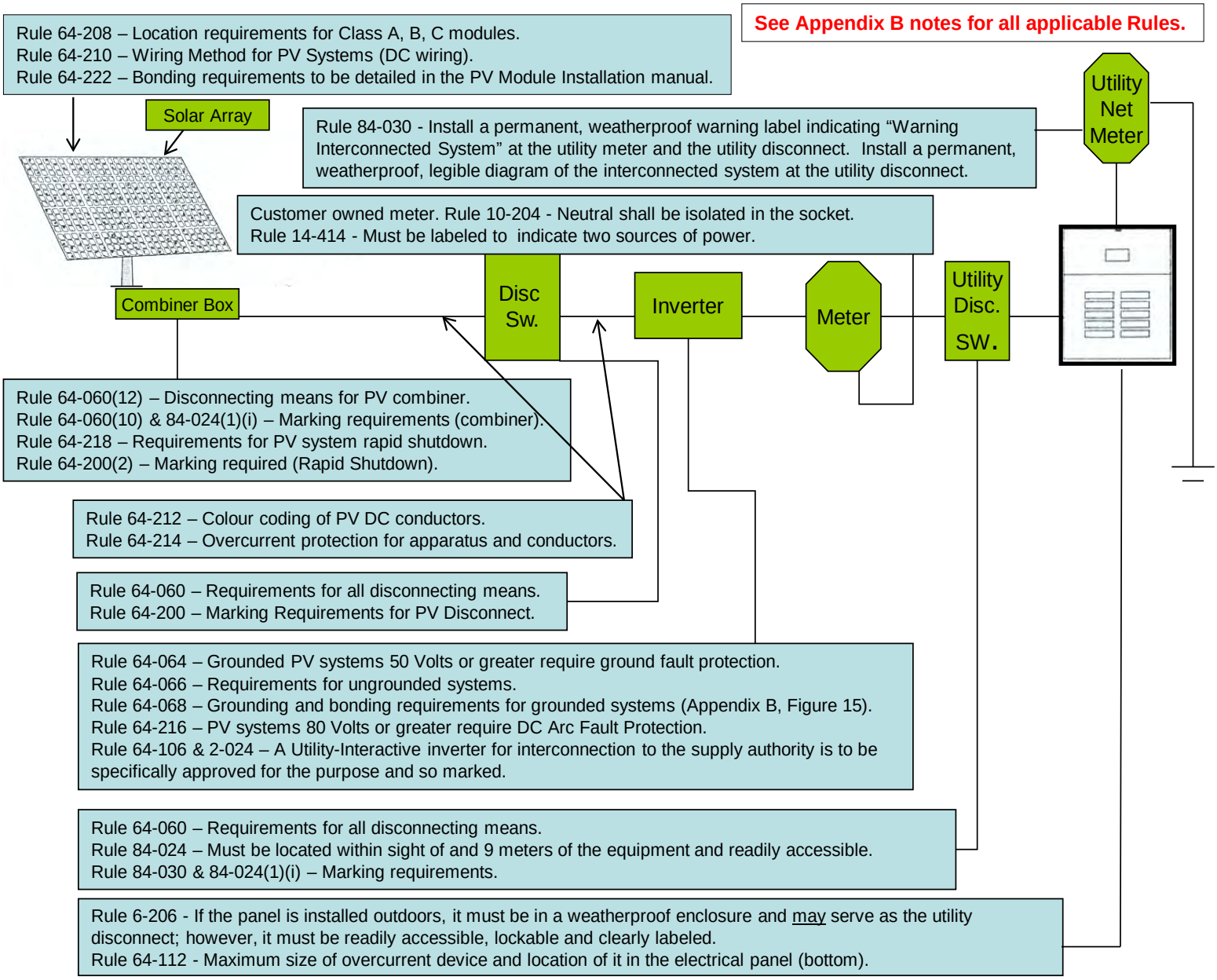
SaskPower will now require standard meter marking when multiple meters are grouped together in an electrical room, or with a multi-gang meter socket. Each meter will be required to be marked to indicate the address or unit number to ensure customers are correctly billed and connections / disconnections can be done safely.

Marking will be required to be on the cover of the meter socket and on the interior of the meter socket enclosure. It will be permanent, weather and ultraviolet resistant, with a minimum height of 50 mm (2").

Item #11 – SaskPower Electric Service Requirements
5 Jaw S3 Form Meter Socket Requirements

All single phase 3 wire services exceeding 200A will require a 5 jaw 3S form meter socket with provision for a test switch, and NO circuit closer. A 400A self-contained meter socket (if allowed) will need to incorporate a 5 Jaw 3S form socket with a test switch mounting plate, and NO circuit closer.

Electrical Inspections Solar Installation

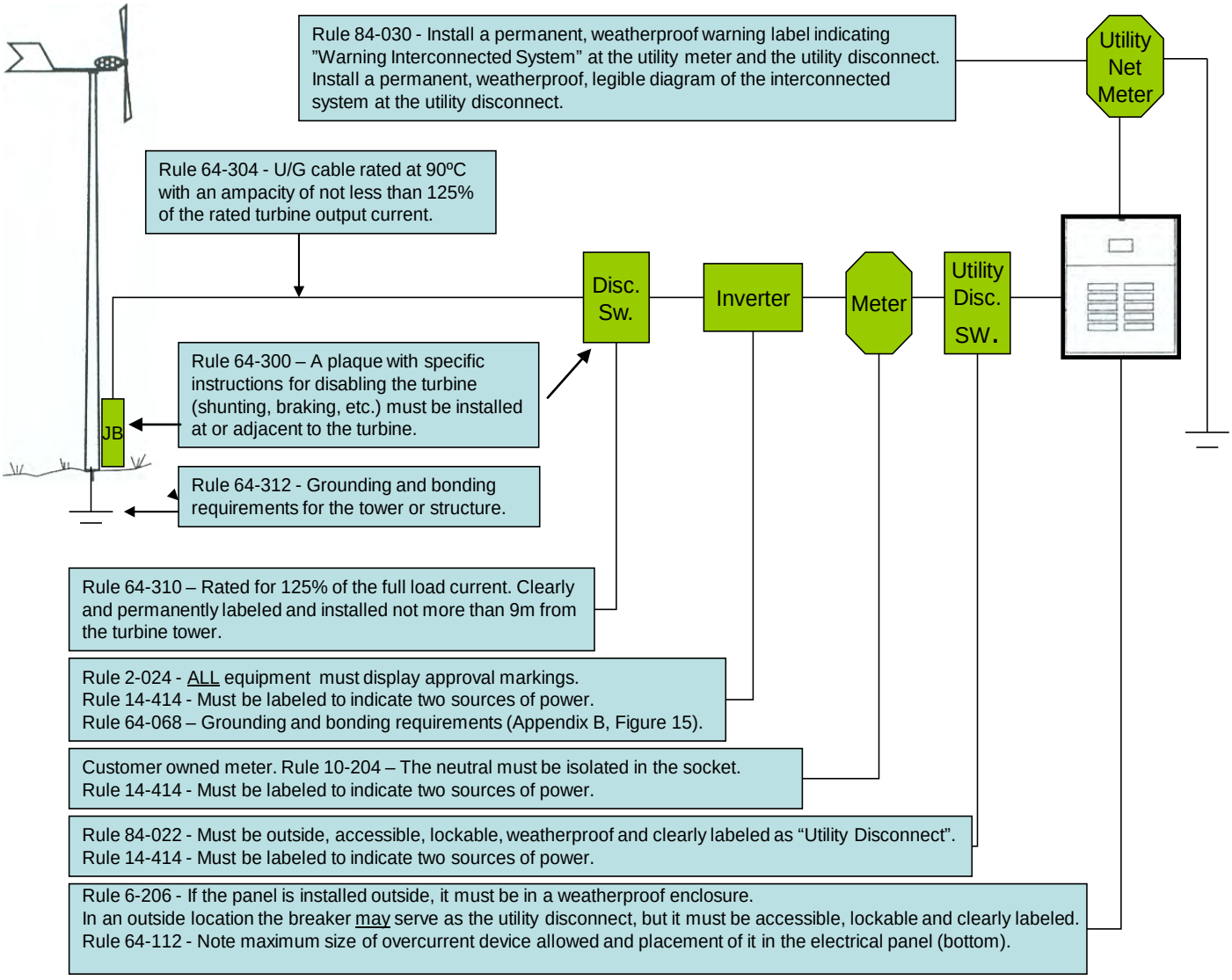


Note: 1. All the required labels and diagrams **must** be installed **before** the installation will be approved. All labels and diagrams installed outdoors and exposed to the weather shall meet the requirements listed in the Saskatchewan Interpretations under Rules 64-072, 64-074, & 64-200 for marking, warning labels, notices and diagrams.

2. All wiring must be done by a licensed Saskatchewan Electrical Contractor and be covered by an appropriate electrical permit. Homeowner Permits are not allowed.
3. It is the responsibility of the Electrical Contractor to arrange for an inspection 2 weeks prior to requesting a network service connection.
4. When Network Metering is installed, the Local Utility must approve all connection diagrams **before** the installation begins.
5. **All renewable energy installations require electrical construction plans to be submitted to Electrical Inspections and reviewed before approval will be granted. See Rule 2-014.**

November 2016

Electrical Inspections Wind Turbine Installation

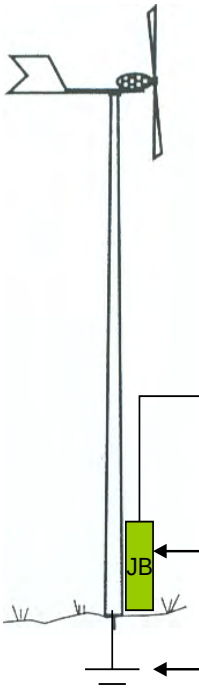


Note:

1. All labels and diagrams **must** be installed **before** the installation will be approved. All labels and diagrams installed outdoors and exposed to the weather shall meet the requirements listed in the Saskatchewan Interpretations under Rule 64-074.
2. All wiring must be done by a licensed Saskatchewan Electrical Contractor and be covered by an appropriate electrical permit. Homeowner Permits are not allowed.
3. It is the responsibility of the Electrical Contractor to arrange for an inspection 2 weeks prior to requesting a network service connection.
4. When Network Metering is installed, the Local Utility must approve all connection diagrams **before** the installation begins.
5. **All renewable energy installations require electrical construction plans to be submitted to Electrical Inspections and reviewed before approval will be granted. See Rule 2-014.**

November 2016

Electrical Inspections Rural Wind Turbine Installation (option)



Rule 84-030 - Install a permanent, weatherproof warning label indicating "Warning Interconnected System" at the utility meter and the utility disconnect. Install a permanent, weatherproof, legible diagram of the interconnected system at the utility disconnect.

Grounding System by Utility

Rule 64-304 - U/G cable rated at 90ºC with an ampacity of not less than 125% of the rated turbine output current.

Disc. Sw.

Inverter

Meter

Utility Disc. SW.

JB

Rule 64-300 – A plaque with specific instructions for disabling the turbine (shunting, braking, etc.) must be installed at or adjacent to the turbine.

Rule 64-312 - Grounding and bonding requirements for the tower or structure.

Rule 64-310 – Rated for 125% of the full load current. Clearly and permanently labeled and installed not more than 9 m from the turbine tower.

Table 19 Approved service entrance cable c/w protective bond as per Rule 10-814

Rule 2-024 - ALL equipment must bear approval markings.
Rule 14-414 - Must be labeled to indicate two sources of power.
Rule 64-068 – Grounding and bonding requirements (Appendix B, Figure 15).

Customer owned meter. Rule 10-204 - The neutral must be isolated in the socket.
Rule 14-414 - Must be labeled to indicate two sources of power.

Rule 84-022 - Must be outside, accessible, lockable, weatherproof- clearly labeled as "Utility Disconnect".
Rule 14-414 - Must be labeled to indicate two sources of power.
Rule 6-200 - Must be service entrance rated equipment.
Rule 10-204 – The neutral must be isolated.

Farm Service Center - Note: The breaker on the pole does not satisfy Rule 84-022.

Note:
1. All labels and diagrams **must** be installed **before** the installation will be approved. All labels and diagrams installed outdoors and exposed to the weather shall meet the requirements listed in the Saskatchewan Interpretations under Rule 64-074.
2. On services above 400 Amp - the labels required by Rule 84-030 will need to be installed at the meter and at the main switch.
3. All wiring must be done by a licensed Saskatchewan Electrical Contractor and be covered by an appropriate electrical permit. Homeowner Permits are not allowed.
4. It is the responsibility of the Electrical Contractor to arrange for an inspection 2 weeks prior to requesting a network service connection.
5. When Network Metering is installed, the Local Utility must approve all connection diagrams **before** the installation begins.
6. **All renewable energy installations require electrical construction plans to be submitted to Electrical Inspections and reviewed before approval will be granted. See Rule 2-014.**

November 2016