Moving forward, several code-compliant installation methods exist and should provide sufficient flexibility for all services for farms under 200 A. The installation of the utility-owned equipment is not restricted under the requirements of the CEC and the installation of an "economizer/totalizer" is not prevented by this information bulletin. However, this piece of equipment cannot be considered to be the consumer's service disconnect required by Rule 6-200(1). Users are reminded to consider Sections 6 and 10 requirements when planning the consumer's service for a single family farm up to 200 A.

Rule 6-206 Consumer's Service Equipment Location

Length of Service Conductors in Buildings

Rule 6-206(1)(c) requires that service equipment be located as close as practicable to the point where the service conductors enter the building. Rule 6-208 outlines where the conductors must be located. Both rules recognize that service conductors must enter the building to make connection to the service equipment. While it is generally agreed that in the interest of safety the unfused conductors within the building should be as short as possible, this distance is not clear.

A recommended practice in Alberta is to limit the length of service conductor in the building to 3m. Where this is not practicable, service conductors may extend further inside the building provided they are mechanically protected in rigid metal conduit. The maximum distance for service conductors inside a building should not exceed 7.5 m.

Alternatively, Rule 6-206(3) may be applied in situations when the service panel cannot be located near the point of entry of the consumer's service conductors. In this case, a Safety Codes Officer must evaluate each situation on an individual basis.

Rule 6-300 Installation of Underground Consumer's Services (0-750 V)

Underground Service Cable on the Customers' Premises

Electrical utilities do not always install secondary underground service cable on the customers' premises. In these situations, it is necessary for the property owner, developer or contractor to arrange for the safe and reliable installation of this facility.

The following guidelines are recommended:

1. Only competent, qualified installers should install underground service conductors.
2. Obtain the appropriate electrical permits from the inspection authority having jurisdiction.
3. To facilitate connection to the utility distribution system, terminate the supply end of the service conductors in a location and manner acceptable to the supply authority.
4. Tape or otherwise seal the exposed supply end of the consumer's service conductors to prevent the entry of moisture into the conductors or cable.
5. Provide mechanical protection as necessary to prevent damage to the conductors or cable pending connection by the supply authority.
6. The supply authority is responsible for connecting the consumer's service conductors to the supply lines.
7. Ensure that service conductors and cables are approved and suitable for the application in accordance with Rule 2-024, 6-300 and Table 19.

Underground service entrance cable assemblies listed in Table 19 are not intended for above ground applications. The Code however, permits the cable to be extended out of the ground for termination on a structure, pole, or in a building and rigid conduit is used for mechanical protection as required.

When USEB-90 cable is used for an underground service installation, it may extend from the meter socket to the service box.

Any cable extending into a building is required to have the appropriate flame spread rating unless it is enclosed in metallic armour or a raceway. To comply with the Alberta Building Code, the raceway must be non-combustible unless the building is of combustible construction, in which case a combustible raceway having a flame spread rating of not more than 25 may be used.

Where USEB-90 is installed in a raceway, care must be taken to ensure the cable is not bent or handled in a way that will damage the conductors or the outer jacket. USEI-90 service entrance cable does not have an overall armour or concentric neutral and should be installed using the same wiring methods as for individual conductors.

Connection of Consumer's Service Conductors to Pad Mount Transformers

The supply authority is responsible for the safety and acceptability of secondary terminations on their pad mount transformers regardless of who makes the actual connections. The following guidelines are recommended regarding safety procedures for the connection of a Consumer's service to the secondary terminals of a utility pad mount transformers:

1. Obtain written authorization and supplementary instructions from the supply authority before commencing electrical work in the pad mount transformer enclosure.
2. Supply and install terminating lugs
    - approved for the type of conductors used, and
    - compatible with the secondary terminals or bus of the transformer
3. Ensure that the supply authority inspects the terminations prior to energizing the transformer.

Maintenance of Underground Consumer's Services

If breakdown occurs in underground service conductors or repairs become necessary, the local electrical utility company must be contacted to disconnect and isolate the consumer's service conductors from the power supply.

The electrical utility companies have an agreement with "Alberta One-Call" to locate and mark the location of the underground service conductors for digging postholes or other excavation and digging operations.

Rule 6-300(1)(b)(ii) requires that metallic sheathed cable or concentric neutral cable is to be installed without splice or joint from the point of connection at the supply service to the meter socket or service equipment in the building. However, Rule 12-112(5) allows underground runs of cable to be spliced with suitable splicing devices or materials (kits) when the original installation is damaged.