Q. DISTRIBUTION

PUB 29.0 (RE: B-31, B-35, B-41, B-44, B-47, B-49, B-51)

PUB 29.3
Provide an explanation of the difference, if any, between the terms:

- **(a) "distribution structures and electrical equipment' (B-44);**
- **(b) "distribution lines" (B-47)**
- **(c) "poles, conductor and hardware" (B-49);**
- **(d) "feeder, equipment or conductor upgrade" (B-51);**
- **(e) "primary and secondary distribution lines" (B-31); and**
- **(f) "service wires" (B-35).**

A.

a) Distribution structures and electrical equipment (B-44)

The distribution portion of the electric system is that portion between the substation and the customer. Distribution electrical equipment typically includes the conductors, cutouts, surge/lightning arrestors, insulators and transformers used to deliver electrical energy to the customer. Distribution structures are used to support the distribution electrical equipment, and typically include poles and crossarms, and, where necessary for additional structural support, guy wires and anchors.

b) Distribution lines (B-47)

Distribution lines are comprised of **distribution structures** and **distribution electrical equipment**. Distribution lines can be overhead or underground.

c) Poles, conductor and hardware (B-49)

This phrase encompasses the actual steel, wooden or concrete utility poles used to support overhead electrical equipment, along with the conductors (wire or cable suitable for transmitting electrical energy), and the ancillary items, including insulators and fused cut-outs, used to attach the conductors to the poles.

d) Feeder, equipment or conductor upgrade (B-51)

A feeder is a **primary** distribution line [i.e., a line operating at a voltage between 4 kilovolts (kV) and 25 kV]. Typically, electrical energy is transmitted by the feeder from the substation to a distribution transformer, which transforms the energy to the **secondary** voltage. From the transformer, the secondary line that distributes the energy to the customer through a **service line**.

Feeder, equipment and conductor upgrades are the replacement of any **distribution structures** or **distribution electrical equipment** to maintain the operation of the electrical system within recommended guidelines. As noted in the response to Request for Information PUB 29.1 NP, Newfoundland Power's use of

the term "feeder upgrade" typically refers to specific projects that are planned and are directed at improving performance or the condition of a feeder.

e) Primary and secondary distribution lines (B-31)
Primary distribution lines are lines operating at 4 kV, 12.5 kV or 25 kV. Secondary distribution lines are lines operating at voltages lower than primary distribution lines. Typical secondary voltages are 120/240 volts, 120/208 volt and 347/600 volts. All residential and most small general service customers accept electrical energy at secondary voltages.

f) Service Wires (B-35) – Service wires are low voltage wires that connect a customer's electrical service equipment to either the utility's transformers or to a secondary distribution line. Service wires are typically bundled together in a triplex or quadruplex arrangement.

The terms noted in (a), (b) and (c) are largely interchangeable, as is obvious from the above definitions.