ONTARIO AMENDMENTS TO THE CANADIAN ELECTRICAL CODE PART I, C22.1-02

December 15, 2006

Sections 0 through 86 of the Canadian Electrical Code Part I C22.1-02, exclusive of any references to any of the appendices, is adopted as part of the Electrical Safety Code with the following amendments:

· Delete the title of Section 0 and replace with:

SECTION 0 - DEFINITIONS

· Delete the subsection entitled Object and the subsection entitled Scope.

· Delete the definition of acceptable and replace with:

"acceptable" means not presenting an undue hazard to persons or property under the circumstances;

· Add the following definition:

"applicable standards" means standards of design, construction, testing and marking;

(a) That are applied to electrical equipment by persons or associations who inspect, test and report upon electrical equipment; and

(b) That are intended to prevent exposure of persons and property to undue hazards.

(2) An applicable standard shall not be inconsistent with any requirement of this Code.

· Delete the definition of approved as applied to electrical equipment and replace with:

"approved" means authorized or approved in accordance with this Code;

· Add the following definition:

"certification organization" means an organization accredited in accordance with the *Standards Council of Canada Act* to certify;

(a) Electrical equipment;

(b) Electrical wiring in mobile homes, mobile industrial or commercial structures, recreational vehicles or any manufactured or prefabricated dwelling units; or

(c) The things set out in both clauses (a) and (b);

· Add the following definition:

"connection authorization" -
when concerning supply of electrical energy to an electrical installation from a supply authority, means written permission by the inspection department to a supply authority, or any other person or corporation, to supply electric energy to a particular electrical installation; or

when concerning supply of electric energy from one part of an electrical installation to another, or from a source of electric energy other than that of a supply authority, means permission from the inspection department to a contractor to connect a particular electrical installation or part thereof to a source of electric energy;

· Add the following definition:

"contractor" means any person who as principal, servant, or agent, by himself or herself or by associates, employees, servants or agents performs or engages to perform either for his or her own use and benefit or for that of another and for or without remuneration or gain any work with respect to any electrical installation or any other work to which this Code applies;

· Add the following definition:

Critical Injury means an injury of a serious nature that:

a) Places life in jeopardy, or

b) Produces unconsciousness, or

c) Results in a substantial loss of blood, or

d) Involves the fracture of a leg or arm but not a finger or toe, or

e) Involves the amputation of a leg, arm, hand or foot but not a finger or toe,or

f) Consists of burns to a major portion of the body,or

g) Causes the loss of sight in one eye.

· The definition of "current-permit" is deleted.

· Delete the definition of " electrical installation" and replace with:

"electrical installation" means the installation of any wiring in or upon any land, building, or premises from the point or points where electric power or energy can be supplied from any source, to the point or points where such power or energy can be used therein or thereon by any electrical equipment and shall include the connection of any such wiring with any of the said equipment, and any part of the wiring aforesaid, and shall also include the maintenance, alteration, extension, and repair of such wiring.

· Add the following definition:

"Field Evaluation agency" means an organization recognized by the Inspection Department as being qualified and capable of carrying out a safety evaluation of electrical equipment that is limited in scope to essential safety considerations,

· Delete the definition of "inspection department" and replace with:

"inspection department" means Electrical Safety Authority, as designated by regulation pursuant to the Electricity Act, 1998;

· Add the following definition:

"National Building Code of Canada" means Ontario Building Code;

· Add the following definition:

"requirements of the supply authority" means a code or standard under a rule or by-law of a municipal corporation or commission or under a rule of a person supplying power to such works;

· Add the following definition:

"Serious electrical incident" means

(a) Any electrical contact which causes death or critical injury to a person, or

(b) Any fire or any explosion or any condition suspected of being electrical in origin which might have caused a fire, explosion, loss of life, critical injury to a person, or damage to property, or

(c) Any electrical contact with electrical equipment operating at over 750 volts, or

(d) Any explosion or fire of electrical equipment operating at over 750 volts

· The definition of "special permission" is deleted.

· Delete the definition of "supply authority" and replace with:

"supply authority" means any municipal corporation, commission, company or person supplying electrical power or energy intended for sale or distribution to the public;

· Add the following definition:

"testing organization" means an organization accredited in accordance with the Standards Council of Canada Act to conduct testing activities and report on the results;

· Add the following definition:

"V amperes" with respect to an electric circuit means the mathematical product of the voltage and amperage carried thereby;

· Delete the title of Section 2 and Rules 2-000 through 2-036 and replace with:

SECTION 2 - ADMINISTRATION GENERAL RULES

General

2-000 Scope. This Code does not apply to:

(a) Electrical equipment and electrical installations used exclusively in the generation, transmission or distribution of electrical power or energy intended for sale or distribution to the public, where:

(i) the distributor is licensed to own or operate the distribution system under Part V of the *Ontario Energy Board Act, 1998;*

(ii) the transmitter is licensed to own or operate the transmission system under Part V of the *Ontario Energy Board Act, 1998;* or

(iii) the generator is licensed to own or operate the generation system or is licensed to provide ancillary services for sale through the IESO-administered markets or directly to another person, under Part V of the *Ontario Energy Board Act, 1998*.

(b) Electrical equipment and electrical installations in communication systems from the transformer or other current limiting device used at the junction of the communication system with the electric circuit supplying the communication system;

(c) Electrical equipment and electrical installations in the cars, car-houses, passenger stations or freight stations used in the operation of an electric railway or electric street railway and supplied with electric current from the railway power-circuit;

(d) Electrical equipment and electrical installations in railway locomotives and railway cars and in signalling systems, communication systems, wayside train monitoring systems and track facilities including the branch circuit supplying such electrical equipment or electrical installations when such electrical equipment or electrical installation is used in the operation of a railway;

(e) Electrical equipment and electrical installations on an aircraft;

(f) Electrical equipment and electrical installations in a mine as defined in the *Mining Act* excepting any dwelling house or other building not connected with or required for mining operations or purposes or used for the treatment of ore or mineral;

(g) Electrical equipment and electrical installations on a vessel of non-Canadian registry or on a vessel that is required to be certified in accordance with the *Canada Shipping Act* except for such equipment and installations required to connect the electrical supply from the on shore electrical supply facility to the service box on the boat and including the service box;

(h) Electrical equipment forming an integral part of a self propelled vehicle that is required to be certified in accordance with the Motor Vehicle Safety Act except for such equipment supplying electrical power from an electrical installation to the vehicle and those portions of a vehicle capable of receiving electrical power from an electrical installation.

2-002 Special Requirements. Sections devoted to rules governing particular types of installations are not intended to embody all rules governing these particular types of installations, but cover only those special rules which are additional to or amendatory of those prescribed in other sections covering installations under ordinary conditions.

2-003 - Record of Electrical Installation Work The owner, owner's agent, or operator shall maintain a record of all electrical installation acceptable to the inspection department in any public building, commercial or industrial establishment, apartment house, or other building in which the public safety may be involved, and shall produce this record to any inspector at any time and from time to time upon request, as specified by the Inspection Department.

2-004 Inspection

(1) A contractor shall file with the inspection department a completed application for inspection of any work on an electrical installation:

(a) Before or within 48 hours after commencement of the work whether or not electrical power or energy has been previously supplied to the land, building, or premises on which the work was performed; and

(b) Shall pay the fees prescribed by the inspection department; and

(c) Be in compliance with Ontario Regulation 570/05 made under Part VIII of the *Electricity Act, 1998*.

(2) An application for inspection which has been refused in accordance with the provisions of Rule 2-008 shall, for purposes of Subrule (1) hereof, be deemed not to be a completed application.

(3) Every contractor who undertakes an electrical installation is responsible for ensuring the electrical installation complies with this Code and for procuring an authorization for connection from the inspection department before the installation is used for any purpose.

(4) The contractor shall give to the inspection department at least forty-eight hours' notice in writing that the work on the electrical installation has been completed and that the installation is ready for a connection authorization, but where the work is being performed in a remote district or is not immediately accessible for any other reason, the notice shall be of such greater length as is necessary to accommodate the inspection schedule of the inspection department.

(5) Inspections as required by the inspection department may be made at such time and in such manner as the inspection department determines.

(6) An electrical installation shall not be concealed or rendered inaccessible until it conforms to this Code and such concealment or rendering inaccessible has been authorized by an inspector.

(7) An inspection may be deemed by the inspection department to have been made for an electrical installation or a group of electrical installations and connection authorized even though all portions of any installation in the group and all installations in the group have not been inspected provided:

a) A contractor shall file with the inspection department a completed application for inspection of any work on an electrical installation or a group of electrical installation within the time specified by the Inspection Department whether or not electrical power or energy has been previously supplied to the land, building, or premises on which the work was performed; and :

(b) The contractor is qualified in accordance with Subrule (8) and (9);

(c) There is compliance with Subrules 2-004 (1(b)), (2), (3) and (4);

(d) The contractor has provided assurance acceptable to the inspection department that all portions of any installation or group of installations comply with this Code;

(e) Portions thereof the installations have been inspected by the inspection department and all inspected portions conform to this Code.

(8) A contractor may be eligible for the process in Subrule (7) where the application for inspection and for a connection authorization is made by:

(a) A contractor who:

(i) Is licensed, registered or certified through appropriate examination by an appropriate authority to carry on trade as an electrical contractor; and

(ii) Holds a valid appropriate certificate of qualification issued to the contractor in accordance with the provisions of The Trades Qualification Act; and

(iii) Holds appropriate liability insurance; and

(iv) Has demonstrated knowledge of this Code as it applies to the installations which is satisfactory to the inspection department; or

(b) A contractor who:

(i) Holds a valid appropriate certificate of qualification issued to the contractor in accordance with the provisions of The Trades Qualification Act; and

(ii) Holds appropriate liability insurance; and

(iii) Has demonstrated knowledge of this Code as it applies to the installations which is satisfactory to the inspection department; or

(c) A contractor who:

(i) Has demonstrated competency through appropriate training and examination or in other ways; and

(ii) Holds appropriate liability insurance; and

(iii) Has demonstrated knowledge of this Code as it applies to the installations which is satisfactory to the inspection department.

(9) Where an installation is such that an application for inspection covers work by more than one individual, the inspection department may require some or all individuals performing work on an installation to satisfy Subrule (8) as a condition for following the process in Subrule (7).

(10) Where Subrule (7) is followed, the particular installations in the group and the particular portions of the installations in a group inspected shall be determined by the inspection department.

(11) The inspection department may refuse to follow the process in Subrule (7) where work by the contractor has been found to be contrary to the requirements of this Code.

2-005 Installations of Replacement Equipment

In an owner occupied single-dwelling, the installation of replacement equipment such as fuses, receptacles, luminaries, general use switches, utilization equipment, transformers for extra low voltage circuits or equipment in extra low voltage circuits are not subject to the requirements of Rule 2-004 provided that the equipment being installed:

(a) is installed by an electrical contractor licensed to operate an electrical contracting business under this Regulation 570/05;

(b) is installed in a branch circuit having a rating not exceeding 30 amperes and 130 volts, and

(c) is interchangeable with the equipment being replaced in function, electrical rating, size and weight without having to change any part of the branch circuit, and

(d) is installed in the same location as the equipment being replaced, and

(e) is approved in accordance with Rule 2-024, and

(f) is not electrical equipment forming part of an electrical installation to which section 68 of this Code applies, and

(g) does not involve the repair, modification or replacement of a service box or a panel board or the replacement of an electro-mechanical over-current device in a service box or panel board.

2-006 Periodic Inspection

(1) An application for inspection may be made by the owner owner's agent or occupant of any manufacturing, mercantile, or other building where electrical installation work of a routine nature in connection with the maintenance or operation of the building or the plant therein is required to be performed at frequent intervals.

(2) Acceptance of the application by the inspection department shall authorize the commencement and carrying out of such work during the period for which the acceptance is issued and Rule 2-004 does not apply.

(3) Upon request, an inspection shall be made at such time and in such manner as the inspection department determines.

2-007 Reporting of serious electrical incidents

(1) An owner, contractor or operator of a facility shall report to the Inspection Department any serious electrical incident of which it is aware within forty-eight hours after the occurrence;

(2) No person shall, except in the interests of public safety, saving life, relieving human suffering, continuity of service or preservation of property, interfere with or disturb any wreckage, article or thing at the scene of and connected with the occurrence, but in no case shall the wreckage, article or thing be carried away or destroyed by any person unless permission so to do is given by an inspector.

2-008 Right of Refusal.

The inspection department may refuse an application for inspection authorization to any person:
(a) Who has failed to pay any fees or dues owing to the inspection department for a period of more than thirty days, or

(b) Who has failed to remedy defects in any electrical work or in any installation after having been notified by the inspection department that the defects exist., or
(c) who is not licensed to operate an electrical contracting business under this Regulation 570/05;
Until

(i) the fees have been paid or

(ii) the defects have been remedied, or

(iii) in compliance with Regulation 570/05.

2-010 Plans and Specifications. (see Appendix B)

1) Electrical work on any electrical installation shall not commence, until plans have been submitted and examined by the Inspection Department where the electrical installation involves:
a) A three phase consumer service or stand by generation, equal to or in excess of 400 Amp circuit capacity; or
b) A single-phase consumer service or stand by generation equal to or in excess of 600 Amp
c) A feeder greater than 1000 amp
(d) Any installations involving consumer owned electric power generating equipment, with a rating in excess of 10 kW (Micro Size) as defined by the OEB, and operating in parallel with a supply authority system; or
(e) Any installation operating in excess of 750 volts, excluding
i) Installations of pole lines exclusively within the scope of Section 75 or
ii) That portion of an underground installation between a supply authority owned transformer and the related supply authority owned switch;or

(2) Plans need not be submitted for maintenance/repair work.

(3) Plans need not be submitted for the replacement of: circuit breakers, disconnects switches transfer switches, splitters, services, panel boards, motor control centres, stand by generators, switchboards, transformers, all operating at 750 volts or less providing:

a) Equipment ampere ratings are equal to the existing equipment ratings and,
b) All other ratings are equal to or exceed the existing equipment ratings and,
c) The existing installation meets the requirements of the Electrical Safety Code

(4) A copy of the examined plans shall be available on site. A copy of the Inspection Departments's code compliance report shall be attached to the plans or the Inspection Department's report number shall be written on the plans.

(5) The person responsible for the plan design shall file with the Inspection Department complete wiring plans and specifications relating to the proposed work, and pay the Plan Review fees as prescribed by the Inspection Department

(6) For installations that will proceed in phases, plans may be submitted as the project progresses. The work of each phase shall not commence until the plans for that phase have been examined

(7) Those plans and specifications that are submitted shall contain the following information, where applicable:

(a) The name and address of the person responsible for their preparation;
(b) The type of building or electrical installation and the site where the work will be carried out;
(c) The location of the service and distribution;
(d) The supply voltage and the single line diagram of the service and distribution;
(e) The loads, the rating of the protection and the identification of the feeder and branch circuits at their respective panelboards;
(f) The KVA or ampere rating interrupting or withstand rating, ampere rating for continuous operation (80 or 100%) of each item of equipment
(g) The type and size of raceways
(h) The number and rating of conductors in raceways;
(i) The rating of cables;
(j) The type of materials, accessories or fixtures installed in hazardous locations;
(k) The size and location of grounding conductors;
(l) A description of underground parts of the installation;
(m) For an addition to an existing electrical installation, any information related to the existing installation affected by the works and a report on the existing loads or the maximum demand loads of the existing installation recorded for the last twelve months; and
(n) For an electrical installation of more than 750 volts, the vertical and horizontal clearances of live parts, and a description of the grounding and of the mechanical protection of live parts

2-012 Connection Authorization

(1) Where any electrical installation or part thereof to which electric power or energy has not previously been supplied is made in or upon any land, building, or premises or subject to Subrule (2) hereof, where any electrical installation or part thereof has been disconnected or cut off from any service or other source of supply under this Code, no supply authority, contractor, or other person shall connect or re-connect the installation or part thereof to any service or other source of supply unless:

(a) The installation and all work in respect thereof have been inspected in accordance with the procedures in Rule 2-004 by an inspector; and

(b) A connection authorization has been issued by the inspection department in respect of the installation.

(2) Where any electrical installation or part thereof has been disconnected or cut off from a source of supply by a supply authority for six months or less for non-payment of rates or because of a change of occupancy of premises, the supply authority may reconnect the installation or part thereof without obtaining a connection authorization.

2-014 Temporary Connection Authorization

(1) Notwithstanding the provisions of Rule 2-012, the inspection department may issue a connection authorization authorising a supply authority, contractor or other person to connect a source of electric energy for a stated length of time and under specific conditions to a temporary electrical installation or to a permanent but unfinished electrical installation and may renew the connection authorization from time to time.

(2) Issuance of a connection authorization in accordance with Subrule (1) does not obligate the inspection department to issue a permanent connection authorization for an installation that is not in compliance with this Code.

2-016 Re-inspection. The inspection department may at any time re-inspect any electrical installation notwithstanding any previous inspection and acceptance of the installation.

2-018 Defects

(1) Every contractor who has performed work on an electrical installation and has been notified by the inspection department that the installation does not conform to this Code shall remedy all defects in work and replace all electrical equipment that is not approved within such time and in such manner as the notice from the inspection department directs.

(2) Every person who has made application for inspection of an installation or portion thereof that has not previously been authorized to receive power and who has been notified by the inspection department that the installation does not conform to this Code shall remedy all defects in work and replace all electrical equipment that is not approved within such time and in such manner as the notice from the inspection department directs.

(3) The inspection department may by notice in writing require any owner or occupant of land, buildings or premises, upon or within which is found an electrical installation in which a condition dangerous to persons or property has developed, to make such changes in the electrical installation as are necessary to remedy the condition.

(4) Upon receipt of the notice referred to in Subrule (3) hereof, the owner or occupant of the lands, buildings, or premises shall cause the installation to be changed in the manner and to the extent prescribed by the notice within the time limited therein.

(5) Where a contractor or person refuses or neglects to comply with a notice given under Subrules (1) or (2) hereof, or the owner or occupant of lands, buildings or premises refuses or neglects to comply with a notice given under Subrule (3) hereof, the inspection department may disconnect the supply, or require the supply authority to disconnect the supply of electrical power or energy to the lands, buildings or premises in which is contained the electrical installation that was the subject of the notice.

(6) If the supply has been disconnected pursuant to Subrule (5) hereof, it shall not be reconnected until full compliance with the notice has been made.

2-020 Approval of Electrical Wiring in Mobile Homes, Mobile Industrial or Commercial Structures, Recreational Vehicles, or any Manufactured or Prefabricated Dwelling Unit

(1) No person shall advertise, display or offer for sale or other disposal, or sell or otherwise dispose of a Mobile Home, Mobile Industrial or Commercial Structure, Recreational Vehicle, or any manufactured or prefabricated dwelling unit unless the system of electrical wiring installed therein or thereon has been approved.

(2) The system of electrical wiring referred to in Subrule (1) shall be deemed to be approved when:

(a) A certification organization has issued a certification report certifying that the system of electrical wiring in the unit conforms to applicable standards for such wiring;

(b) The certification report is available to the inspection department from the certification organization;

(c) The system of electrical wiring and installation thereof meet all standards of design and construction prescribed by the certification report and complies with all terms and conditions therein; and

(d) The unit bears the certification organization's mark which identifies units certified for use in Canada.

(3) As an alternative Subrule (2) hereof, such system of electrical wiring shall be deemed to be approved when:

(a) The system of electrical wiring or a sample has been examined by the inspection department and found to conform to this Code and to present no undue hazard to persons or property;

(b) A certificate or other writing evidencing the conformity has been issued by the inspection department;

(c) All fees payable to the inspection department in respect of the inspection and certification have been paid; and

(d) The panelboard bears an approval label supplied by the inspection department.

2-022 Sale or Other Disposal and Use

(1) No person shall advertise, display or offer for sale or other disposal, or sell or otherwise dispose of any electrical equipment unless it has been approved in accordance with Rule 2-024.

(2) No person shall connect any electrical equipment to a source of electrical power until such electrical equipment has been approved in accordance with Rule 2-024.

(3) No person shall use any electrical equipment unless it has been approved in accordance with Rule 2-024.

(4) Where a certification report in respect of any approved electrical equipment requires that a notice indicating the proper and safe manner of use of the equipment be affixed thereto or furnished therewith, no person shall sell or otherwise dispose of the equipment without affixing or furnishing the notice in the manner required by the certification report.

(5) Notwithstanding Subrule (1), unapproved electrical equipment shall be permitted to be displayed at trade shows when permission is given by the Inspection Department.

2-024 Approval of Electrical Equipment

(1) Subject to the other provisions of this Rule, electrical equipment is deemed to be approved if:

(a) A certification organization has issued a report certifying that the equipment conforms to the applicable standards for the equipment;

(b) The report referred to in clause (a) is available to the Inspection Department from the certification organization;

(c) The equipment complies with all standards of design and construction and all terms and conditions set out in the report; and

(d) The equipment bears the certification organization's mark which identifies equipment certified for use in Canada.

(2) As an alternative to Subrule (1) electrical equipment is deemed to be approved if:

(a) A field evaluation agency has examined the equipment or a sample and has found that it conforms to the applicable standards for the equipment and presents no undue hazard to persons or property;

(b) The equipment is within the scope of Section 3 of the Code, and within the field evaluation agency's accreditation under the *Standards Council of Canada Act* and recognized by the Inspection Department;

(c) The equipment bears a label approved for use in either Ontario or Canada-affixed by the field evaluation agency, and

(d) Where the field evaluation agency has examined only a sample, the equipment is of the same design and construction as the sample.

(3) As an alternative to Subrule (1) electrical equipment is deemed to be approved if:

(a) The inspection department has examined the equipment or a sample, found that it conforms to this Code and presents no undue hazard to persons or property;

(b) The equipment bears a label affixed by the inspection department;

(c) Any fees payable to the inspection department in respect of the examination have been paid; and

(d) Where the examination and testing was of only a sample, the equipment is of the same design and construction as the sample.

(4) Where testing is required for the purposes of subrule (3), the inspection department may accept reports or other evidence of testing from a certification organization, a testing organization, a professional engineer, or other responsible qualified person.

(5) Electrical equipment that is used in or connected to an electrical installation may be inspected under Rule 2-004, and it shall be deemed to be approved if:

(a) the installation and equipment pass the inspection; and

(b) persons or property would be adequately protected from any undue electrical shock or fire hazard as a result of the inspection.

(6) No person shall affix to any electrical equipment an approval label that was not issued for that equipment.

2-026 Cancellation of Approval

(1) The inspection department may cancel the approval of electrical equipment if:

(a) The equipment is not being manufactured or produced in accordance with all standards of design and construction and all terms and conditions set out in the certification report for the equipment referred to in Subrule 2-024(1) and (2);

(b) The equipment has been shown by field experience to be unduly hazardous to persons or property;

(c) An examination of the equipment or of the certification report for the equipment shows that the equipment does not comply with all applicable standards; or

(d) An examination of the certification report or the equipment shows that the equipment cannot be installed in accordance with this Code.

(2) When an approval has been cancelled, the equipment shall be deemed to be not approved. and ;.

(3) The certification organization or field evaluation agency shall make provisions to recall equipment that is deemed to be not approved

2-028 Miscellaneous

(1) The testing and inspection by the inspection department of any electrical equipment under Subrule (3) of Rule 2-024 may be carried out by such inspectors at such times and places and in such manner as the inspection department from time to time determines.

(2) Subject to Subrule (5) of Rule 2-024, any electrical equipment used or capable of being used or adapted to serve or perform any particular purpose or function when connected to an electrical installation shall be approved before being so connected unless the connection is made for the purpose of inspection or testing of the equipment under this Code.

(3) Any electrical equipment that consists of an assembly or combination of other electrical equipment is subject to this Code respecting approval, and is not approved by reason only that any or all of the component parts thereof have been individually approved.

2-030 Deviation or Postponement. A deviation from or postponement of the requirements of this Code is lawful in respect of an electrical installation where adequate proof that the deviation or postponement does not create an undue hazard to persons or property under the circumstances has been provided to an inspector of that installation.

2-032 Damage and Interference

(1) No person shall damage or cause any damage to any electrical installation or electrical equipment.

(2) No person shall interfere with any electrical installation or electrical equipment in the course of alterations or repairs to non-electrical equipment or structures except where it is necessary to disconnect or move components of an electrical installation, in which event it shall be the responsibility of the person carrying out the alterations or repairs to ensure that the electrical installation is restored to a safe operating condition as soon as the progress of the alterations or repairs permit.

(3) No person shall remove any tag, seal or warning applied to an electrical installation or applied to electrical equipment by the inspection department from that electrical installation or electrical equipment without permission from the inspection department.

2-034 Use of Approved Equipment. No one shall use any electrical equipment other than approved electrical equipment of a kind or type and rating approved for the specific purpose for which it is to be employed.

2-036 General. No contractor shall perform any work on an electrical installation in any manner contrary to the requirements of this Code.

· Delete Rule 2-306 and replace with

2-306 Shock and flash protection

(1) Electrical equipment such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centres that are installed in other than dwelling units and are likely to require examination, adjustment, servicing, or maintenance while energized shall be field marked to warn persons of potential electric shock and arc flash hazards.

(2) The marking referred to in Subrule (1) shall be located so that it is clearly visible to persons before examination, adjustment, servicing, or maintenance of the equipment.

· Add Section 3 as follows:

SECTION 3 - FIELD EVALUATION OF ELECTRICAL EQUIPMENT

3-000 Scope. This Section applies to the approvals of electrical equipment in accordance with Subrules (2) and (3) of Rule 2-024 and is supplementary to or amendatory of other requirements of this Code.

3-002 Standards. Sections 1 through 6 of Special Publication SPE 1000-99 prepared by the Canadian Standards Association and entitled "Model Code For the Field Evaluation of Electrical Equipment", is adopted as part of this regulation with the following amendments:

Delete clauses 4.27, 4.28.1, 4.29, and 4.30.
Replace clause 1.7 (e) with: Components that will require further evaluation as part of a complete assembly, such as switches, relays, and timers.
Add clause 4.1.2.8: Switches and controls shall comply with the requirements of CSA Standards CAN/CSA-C22.2 No. 14 and C22.2 No. 24, 55, 111, and 156, as applicable.
Add clause 4.1.3.3: Transformers shall comply with the requirements of CSA Standard C22.2 No. 66 and CAN/CSA-C22.2 No. 47, as applicable.

Add clause 4.1.4.8: Motors shall be of types suitable for the particular application of the equipment and shall comply with the applicable requirements of CSA Standard C22.2 No. 100.
Add clause 4.1.6.3: Receptacles for attachment plugs shall comply with the requirements of CSA Standard CAN/CSA-C22.2 No. 42 and the Canadian Electrical Code, Part I, as applicable.
Replace clause 4.23.3 with: Electrolytic or other special types of capacitors, and capacitors intended for connecting directly across the line, shall comply with the requirements for capacitors as specified in CSA Standard C22.2 No. 8.
Add clause 4.24.2: Suppressors used for suppressing radio interference shall comply with CSA Standard C22.2 No. 8.

Add the following Subrules to Rule 4-004:

(6) The ampacity of service conductors supplying enclosed fusible switches not exceeding 600 A shall not be less than the switch rating.

(7) Notwithstanding Subrule (17), where the load can be determined under Section 8, the ampacity of service conductors supplying enclosed fusible switches rated over 100 A but not exceeding 600 A shall not be less than the load or 80 per cent of the switch rating, whichever is the greater.

(8) The requirements of Subrules (17) and (18) shall also apply to the conductors on the load side of the main service switch or equivalent up to the first point of distribution or equivalent.

(9) Subrules (17), (18) and (19) shall not apply to conductors supplying:

a. A single fixed load where the load is unlikely to be increased; or

b. A motor load where the conductors are sized in accordance with Section 28.

· Delete Subrule 6-112 (2) and replace with:

(2) The point of attachment of supply or consumer service conductors shall be not less than 4.5 m nor more than 9 m above sidewalk or grade level, and shall be located such that the clearance of supply conductors at any point above finished grade shall be not less than the following

(a) 4.5 m on properties accessible to pedestrians and passenger vehicles only; or

(b) 6 m on properties accessible to commercial and farm vehicles.

· Replace Subrule 6-200 (2) with the following:

(2) Where acceptable, or unless prohibited by a code or standard under a rule or by-law of the supply authority concerning the number of service boxes, more than one service box shall be permitted to be connected to a single consumer's service provided:

(a) The subdivisions are made in a multiple or dual lug meter mounting device rated at not more than 600 amperes and 150 V to ground; and

(b) The meter mounting device is located outdoors; and

(c) For other than consumer's services to residential occupancies, the ampere rating of the multiple meter mounting device is not less than the sum of the ampere ratings of the service boxes supplied from the meter mounting device.

· Add Rule 10-004 as follows:

10-004 Special Terminology. In this Section the following definition applies:

"Effectively grounded metal structural frame of a building" means a metal structural frame of a building with members (including columns and beams) that are permanently bonded to each other and to the main service grounding conductor or electrode in such as way as to satisfy the requirements of Rule 10-500.

· Add Subrule 10-206(3) as follows:

(3) Notwithstanding Rules 10-802 and 10-806, where an isolated system or circuit is required to be grounded, the grounding connection shall be permitted to be made to the effectively grounded metal structural frame of a building.

· Renumber Rule 10-500 to be Rule 10-500 Subrule (1).

· Add Subrule 10-500(2) as follows:

(2) Where an effectively grounded metal structural frame of a building is used to ground circuits or systems within the building, the building frame shall be grounded in at least two places by conductors of a size not less than that required by Rule 10-812 and in such a way that should one conductor be damaged, no portion of the frame used for grounding may become isolated.

· Add Rule 10-511 as follows:

10-511 Equipment on Structural Metal. Where a separate bonding conductor is not required by other rules of this Code, electrical equipment that is secured to and in good electrical contact with the effectively grounded metal structural frame of a building is deemed to be bonded to ground.

· Subrule 12-000 (1) parts (b) and (d) are deleted.

· Delete Subrule 14-308 (1) and replace with:

(1) When power for operating a circuit breaker is derived from a battery, the battery shall not supply any load other than the circuit breaker and its associated control circuits and the battery voltage shall be continuously monitored.

· Add the following rule:

14-418 Disconnecting Means

(1) A single disconnecting means shall be provided either integral with or adjacent to the distribution equipment:

(a) Within each unit of a multi-unit building, other than a dwelling unit;

(b) Within each area common to more than one building, such as an underground parking area; or

(c) Within each building when fed from another building.

(2) Subrule (1) does not apply to circuits from part of fire alarm, fire protection and emergency systems.

Delete Subrule 24-000 (2).

Add Rule 24-116

24-116 Receptacles subject to standing fluids on the floor or drenching of the work area (see Appendix B)
All receptacles in areas subject to standing fluids on the floor or drenching of the work area shall be
(a) protected by a ground fault circuit interrupter of the Class A type; or
(b) supplied by an isolated system conforming to Rule 24-200.

Modify Subrule 26-700(8) General Receptacles

(8) Notwithstanding Subrule (7), at existing outlets where a grounding means does not exist in the receptacle enclosure, grounding-type receptacles without a bonding conductor shall be permitted to be installed, provided that each receptacle is
(a) protected by a ground fault circuit interrupter of the Class A type that is an integral part of this receptacle;

(b) supplied from a receptacle containing a ground fault circuit interrupter of the Class A type; or
(c) supplied from a circuit protected by a ground fault circuit interrupter of the Class A type.

Rules **26-700-(12) (see Appendix B)** - Add subrule **to be effective in January 2003**:

26-700-(12) Receptacles located in kitchens and installed within 1 m of a kitchen sink along the wall behind counter work surfaces shall be protected by a ground fault circuit interrupter of the Class A type.

Add 26-710(o) Receptacles General

26-710(o) all receptacles installed outdoors and within 2.5 m of finished grade shall be protected with a ground fault circuit interrupter of the Class A type.

Rules **26-700-(12) (see Appendix B)** - Add subrule **to be effective in January 2003**:

26-700-(12) Receptacles located in kitchens and installed within 1 m of a kitchen sink along the wall behind counter work surfaces shall be protected by a ground fault circuit interrupter of the Class A type.

Subrule **26-744(4)** in the Canadian Electrical Code is deleted and replaced with:

(4) A receptacle of CSA Configuration 14-50R, as shown in Diagram 1, shall be installed at a suitable location in every single dwelling and in every dwelling unit of an apartment or similar multi-dwelling building for supplying electric energy to an electric range.

Subrules **26-744(9), (10), (11) and (12)** are added as follows:

(9) Where a wiring system intended to supply an electric clothes dryer is installed, it shall be connected to a receptacle as outlined in Subrule (3) at the load end and connected to the panelboard at the supply end.

(10) Where a receptacle as required by Subrule (3) is installed, it shall be connected to the panelboard by a wiring system as specified in Section 12.

(11) The range receptacle referred to in Subrule (4) shall be connected to the panelboard by a wiring system as specified in Section 12 and shall have overcurrent protection as required by Section 14.

(12) Notwithstanding Subrule (4), the range receptacle need not be installed in:

(a) Dwelling units where a built-in gas fired or electric cook top or built-in gas fired or electric oven is installed;

(b) Other than single dwellings where provision has been made for a gas range; or

(c) Dwelling units where power from a supply authority is not available and the capacity of local generation is less than 6 kW.

Add subrule 30-308(4) Circuit connections to be effective in August 2007:

30-308 (4) Each fluorescent luminaire installed on branch circuits with voltages exceeding 150 volts-to-ground shall be
(a) provided with a disconnecting means integral with the luminaire that simultaneously opens all circuit conductors between the branch circuit conductors and the conductors supplying the ballast(s); and
(b) marked in a conspicuous, legible, and permanent manner adjacent to the disconnecting means, identifying the specific purpose.

Rules 30-500 to 30-510" to be deleted in the OESC

· Section 54 is deleted.

· Rule 56-106 is deleted.

· Section 60 is deleted.

· Add Section 75 as follows:

SECTION 75 - INSTALLATION OF LINES AND WIRING OF BUILDINGS

75-000 Scope

(6) This section applies to:

(a) Installations of primary and secondary lines except for lines owned by a supply authority; and

(b) Installation of electrical equipment in farm buildings and similar structures.

(2) This section is supplementary to, or amendatory of, the general requirements of this Code.

75-002 Definitions

In this Section:

(6) "ACSR" means aluminium conductor, steel reinforced;

(b) "classified" means poles graded according to strength whereby the minimum circumferential dimensions are so determined that all poles of the same class, regardless of length, will withstand the same horizontal force applied 0.6 m from the top of the pole when supported 1.8 m from the butt end in accordance with CSA standards 015 series;

(c) "CMS" means Central Metering System;

(d) "distribution system" means the system by which electrical power or energy is distributed to the receiving equipment and includes components such as primary line, secondary line, services, distribution transformers, distribution equipment and other equipment of similar nature;

(e) "free standing pole" means a pole structure and base assembly that is installed with engineering direction without the use of guys.

(f) "neutral supported cable" means two or three insulated conductors and a bare neutral;

(g) "open wire bus" means a secondary line conductor with a weatherproof covering on the phase conductors and includes a bare neutral;

(h) "penta" means wood poles treated with pentachlorophenol;

(i) "power conductor" means a conductor which conveys electrical power or energy and is not part of a communication circuit;

(j) "primary line" means a distribution system operating at more than 750 V but not more than 50,000 V phase to phase;

(k) "secondary line" means a distribution system operating at 750 V or less phase to phase.

75-004 General Requirements

(1) Every installation under this section shall be inspected in accordance with Section 2 of this Code.

(2) Where the work consists of the installation of a service, the contractor shall consult the supply authority as to the layout of the service and the location of the transformer and meter, regarding compliance with applicable codes or standards under a rule or by-law of the supply authority concerning the layout of the service and the location of the transformer and meter.

(3) Where the work consists of the installation of conductors over or under a railway, the contractor shall submit to the inspector a plan of the crossing endorsed by the railway company with an approval of the work.

(4) Where a distribution system or part thereof is to be installed underground or underwater, the contractor shall submit to an inspector and obtain his approval of the plans and specifications with respect to the distribution system.

(5) Where approval is required from the supply authority by this rule, such approval shall be obtained prior to commencement of any work with respect to the installation.

B) Poles,Guys and Framing Equipment

75-200 Poles

(1) All secondary line, primary line and transformer poles shall be new, classified, and:

(i) Wood;

(ii) Steel;

(iii) Concrete; or

(iv) Other acceptable material and type.

75-202 Equipment Attached to Poles.

(1) No electrical equipment shall be attached to the poles of a supply authority without express permission of the supply authority.

(2) Equipment mounted on a pole shall be mounted on the same 1/3 continuous pole circumference leaving the remaining 2/3 of the continuous pole circumferences clear for climbing purposes.

(3) Stainless steel bands are not to be used as the sole support for pole mounted equipment, other than for raceways or cable.

75-204 Joint Use of Poles for Communications Circuits and Power Conductors. Power conductors and communication circuits shall not be carried on common poles unless the consent to the joint use of the poles, in writing, is obtained from the supply authority and the operators of the communication circuits.

75-206 Wood Poles

(1) The pole "Species—Treatment" combinations listed in Table 102 are acceptable for new installations.

(2) Notwithstanding Rule 75-200(1)(i), pressure treated pine and butt treated western cedar poles for new lines may be re-used provided that the poles are classified, not more than 10 years old and have no visible signs of damage and that their re-use is lawful under Rule 2-030.

(3) (a) A transformer pole shall be a minimum of class 5 and in accordance with the requirements of Table 103;

(b) A single phase primary line pole or a secondary line pole shall be a minimum of class 7;

(c) A three phase primary line pole shall be a minimum of class 5.

(4) Notwithstanding Rule 75-200(1)(i), of this rule, a used wood pole may be used on secondary lines only after its condition has been checked by an inspector and before the pole is set in the ground.

75-208 Marking of Wood Poles

All wood poles shall have:

(a) Butt marking showing:

(i) Type of wood;

(ii) Supplier's code or trademark; and

(iii) Class and length.

(6) Side markings located above the groundline as per table 104;

(c) Side marking which shall include:

(i) Treatment plant;

(ii) Class and length;

(iii) Type of wood;

(iv) Last 2 numerals of year of treatment; and

(v) Preservation code letter.

75-210 Steel Poles Set Directly in Soil. Steel poles set directly in soil are acceptable subject to compliance with Rules 75-212 through 75-224.

75-212 Grounding of Steel Poles

(1) The steel pole shall be permitted to be used as the grounding electrode for equipment mounted on the pole where the steel pole is directly embedded in soil and the portion of the pole in contact with the soil is not coated with any non-metallic coating or covering and such an installation is in accordance with the manufacturer's recommendations.

(2) Where a pole is used as the ground electrode for the transformer, the transformer shall be bonded to the pole and the neutral as per Specifications 44 and 45.

75-214 Guying of Steel Poles

(1) Guys directly attached to steel poles need not have a guy insulator and the attachment hardware shall be suitable for the poles.

(2) The number and placing of guys, in addition to meeting the requirements of this Code shall be in accordance with the manufacturers recommendations.

(3) The baseplate and top cap recommended by the manufacturer for the poles shall be installed.

(4) Clamps for the neutral conductor shall be a type designed for the poles, spool type insulating supports are not acceptable.

(5) A bolt to guard against pole splitting at the top is not required.

(6) The distance from top of the pole down to the top bolt for pole line hardware shall be permitted to be 10 cm rather than the 15 or 20 cm used for wood poles.

(7) Pole mounts for rock are not permitted.

(8) Swamp cribbing shall be permitted to be used only where permitted by and in accordance with the manufacturers instructions.

75-216 Steel Pole Installations In Known Corrosive Soils. (see Appendix B)
Additional below-grade corrosion protection shall be required for steel poles set directly in soil where there is knowledge or a history of aggressive corrosion of steel or iron in the soil.

75-218 Steel Pole Requirements

(1) The poles shall be manufactured in compliance with the designs used to assign classes and other applicable requirements in CSA C22.3 No. 1, Overhead Systems.

(2) The poles are to be galvanized.

(3) Evidence of compliance with the foregoing is to be a report from a certification organization or from a professional engineer.

(4) Notwithstanding Rule 75-200 (1) (ii), a used steel pole may be used on secondary lines only after its condition has been checked by an inspector and before the pole is set in the ground.

75-220 Marking of Steel Poles

(1) The poles shall be side marked above the ground line as per Table 104, with manufacturer's code or trade mark and with the last two digits of the year of manufacture, pole class and length.

(2) The pole class marking used for pole design loads is to have equivalency with the wood pole classes 1, 2, 3, 4, 5 and 6 as set out in CAN/CSA-O15, where the equivalency is based on the requirements for Grade 2 construction as defined in CSA standard C22.3 No 1, Overhead Systems.

75-222 Insulators on Steel Poles. Insulators that may be mounted directly on grounded steel structures are specified on Table 100.

75-224 Depth of Setting of Steel Poles. Depth of setting for steel poles shall be as shown in Table 104.

75-228 Concrete Poles. Installations of concrete poles shall be in accordance with Rules 75-232 through 75-238.

75-230 Insulators on Concrete Poles. Insulators that may be mounted directly on grounded concrete poles are specified on Table 100.

75-232 Grounding of Concrete Poles

(1) Each pole shall be installed with a grounding stud and shall be connected to the system neutral or ground rod to provide grounding for the reinforcing bars.

(2) The reinforcing bars shall not be considered as a ground electrode.

75-234 Concrete Pole Selection.

(1) Pole classes accepted shall be in accordance with the equivalencies in Table 101.

(2) Notwithstanding Rule 75-200 (1) (iii), a used concrete pole may be used on secondary lines only after its condition has been checked by an inspector and before the pole is set in the ground.

75-236 Marking of Concrete Poles. The poles shall be side marked above the ground line as per Table 104, with manufacturer's code or trade mark and with the last two digits of the year of manufacture, pole class and length.

75-238 Depth of Setting of Concrete Poles. Depth of setting for concrete poles shall be as shown in Table 104.

GENERAL

75-240 Length of Poles. Subject to Rule 75-310:

(1) Every pole in a primary line shall be at least 12.2 m (40 feet) long.

(2) Every pole in a secondary line shall be at least 9.2 m (30 feet) long.

(3) Notwithstanding Subrules (1) and (2), in case of rock pole mounts approved in accordance with Rule 75- 242 (6) (b) the above pole lengths can be reduced by 1.5 m.

(4) Notwithstanding Subrule (1), lesser pole lengths are acceptable for stand alone transformer pole installations, provided the vertical height of any live part is at least 7m (23 ft.) above grade level

75-242 Setting of Poles

(1) Where a pole having a length shown in column 1 of Table 104 is set in earth, the butt end of the pole shall be buried to a depth at least that prescribed in column 2 of the table.

(2) Where a pole having a length shown in column 1 of Table 104 is set in solid rock using a rock auger, the butt end of the pole shall be buried to a depth at least that shown in column 2 of the table less;

(a) 30 cm for fair rock and limestone; or

(b) 60 cm for solid rock, granite or massive limestone.

(3) Where poles are installed on slopes or hill-sides, the depth of the hole shall be measured from the lower side of the opening.

(4) Corner and dead-end poles shall be offset away from anchor, or raked towards the anchor in accordance with Specification 3 and 4.

(5) Pole mounts are acceptable on rock, as per Specification 5, when in accordance with a code or standard under a rule or by-law of the supply authority.

(6) Where it is impossible to employ the above methods:

(a) Poles shall be cribbed as in;

i. Specification 6 - Swamp Cribbing with Steel Culvert Section for Wood Poles; or

ii. Specification 7 - Swamp Cribbing with Steel Culvert Section for Wood Poles with butt of pole not reaching solid earth at normal setting depth.

(b) When bedrock is encountered pole setting reduction using filled steel culverts as a partial substitute is permitted for normal soil setting depth provided:

i. The use of steel culverts is limited to situations where the lack of readily available equipment for rock removal (by blasting or drilling);

ii. The number of steel culverts, when used, is limited to two adjacent pole locations; and

iii. The installation is as per Specification 8.

75-244 Pole Spans and Framing

(1) Poles used in secondary lines shall be placed not more than 40 m apart.

(2) Subject to Subrule (3), poles used in primary lines shall be placed not more than 90 m apart.

(3) Poles used in primary lines shall be framed as per following specifications:

Specification 9 - Primary, 1Ø, 2.4 to 8 kV, Maximum span 90 m.

Specification 10 - Primary, 1Ø, 2.4 to 16 kV, Maximum span 90 m.

Specification 11 - Primary, 3Ø, 2.4/4.16 to 8.0/13.8 kV.

Specification 12 - Primary, 3Ø, 2.4/4.16 to 16/27.6 kV.

Specification 13 - Primary, 3Ø, Line Angles 4°-90°, 2.4/4.16 to 16/27.6 kV.

Specification 14 - Primary, 3Ø, Crossarm, 2.4/4.16 to 16/27.6 kV.

Specification 15 - Primary, 3Ø, Underbuilt, 2.4/4.16 to 16/27.6 kV.

Specification 16 - Primary, 3Ø, 44 kV.

Specification 17 - Primary, 3Ø, Line Angles 4°-90°, 44 kV.

Specification 18 - Primary, 3Ø, Crossarm, 44 kV.

75-246 Anchors

(1) Poles at dead-ends or angles shall be anchored as follows:

(a) Where a steel plate anchor is used, it shall be installed in the manner prescribed by Specification 19;

(b) Where a log anchor is used, it shall be installed in the manner prescribed by Specification 20; or

(c) Where an expansion anchor is used, it shall be installed in the manner prescribed by Specification 21; or

(d) Where a screw anchor is used, it shall be installed in the manner prescribed by Specification 22.

(2) (a) Where anchors are installed in solid rock the anchors shall be installed in accordance with either Fig 1 or 2 of Specification 23;

(b) Where anchors are installed in shale or limestone the anchors shall be installed in accordance with Fig. 1 or 2 of Specification 24.

(3) Power driven screw anchors shall be installed as per manufacturer's specifications.

(4) All backfill associated with installation of anchors shall be well tamped.

75-248 Guy Wires and Guards

(1) Guy wires shall:

(a) Be of 7-strand steel;

(b) Have a diameter of at least 9 mm; and

(c) Be galvanized.

(2) Arrangement of guys shall be in accordance with Specifications 25, 26 and 39.

(3) Suitable guys shall be required for dead-ended temporary service that is mounted on a treated post, and for spans longer than 10 m.

(4) Notwithstanding Subrule (2) and (3) a guy is not required for dead-ended temporary service that is mounted on a pole and where the span does not exceed 10 m.

(5) Guy guards shall be installed at all locations.

(6) The guy guard shall be of plastic and provide good visual identification for public safety.

(7) Where two or more guys are attached to one anchor, a guy guard shall be installed on the upper guy only.

(8) Guys shall not be required for support of a freestanding terminal pole where the specific pole installation includes a design drawing for the pole and supporting base, and the design drawing shall be from the pole manufacturer or shall be signed by a professional engineer.

75-250 Strain Insulator on Pole Guys

(1) Every guy shall have a strain insulator installed in the manner prescribed in Specification 25 and preformed guy grips suitable for the purpose may be used in lieu of 3 bolt clamps.

(2) A second strain insulator at a point below the point of possible contact of the conductor and guy wire shall be installed as per Specification 25 where:

(a) The guyed pole carries a transformer or a fused switch; and

(b) The breaking of a guy wire could cause a part of the guy wire below the strain insulator to fall against a conductor carried by the pole.

75-252 Anchoring for Change of Line Direction. Arrangement of guys and anchoring for change of line direction shall be in accordance with Specification 26.

75-254 Span Guy Construction

(1) Where a span guy shall be installed, it shall be constructed in the manner prescribed in Specification 4.

(2) Where the span between the guyed pole and stub pole crosses over or under conductors operating at a potential of more than 150 V to ground, a second strain insulator shall be installed in the span at a point between the power conductors and the guyed pole and not less than 2.5 m from the stub pole, as per Specification 25.

75-256 Guys on Poles

(1) A guy wire shall be attached to the pole with an approved fitting shown in Item 1 of Specification 27 in the manner prescribed in Specification 3 and in such a way that there is no contact between the guy wire fitting or its mounting bolt and any ground wire on the pole.

(2) Acceptable preformed guy grips may be used in place of the approved fitting mentioned in Subrule (1).

(3) The back of an insulator through bolt shall not be used as an attachment point for guys.

75-258 Anchor Distance from Pole. The distance of an anchor from its pole shall be at least one-third the height of the pole above ground.

75-260 Hardware. All hardware shall be galvanized.

75-262 Crossarms

(1) Crossarms, if made of wood shall be:

(a) Douglas Fir; or Western Larch; or Western Hemlock; or Yellow Cypress; or Jack Pine; or Lodgepole Pine; and

(b) Shall have dimensions in accordance with Specification 29 and be at least 120 mm wide and 95 mm thick.

(2) Steel crossarms shall have dimensions in accordance with Specification 30.

75-264 Braces for Crossarms on Primary Lines

(1) All wood crossarms shall have two braces, each being 864 mm long;

(2) One piece “V” shaped crossarm braces are permitted.

75-266 Insulators. Insulators shall be selected in accordance with Specifications 31, 32, 33 or Table 100.

75-268 Warning Signs. All poles carrying primary or secondary lines shall have the following warning-sign; "Danger —Keep Off, if work on this pole or near wires is necessary, call a qualified person."

C) Primary and Secondary Line Clearances and Installations

75-302 Clearances between Power Conductors and Communication Circuits

(1) Electrical equipment, power conductors, communication circuits and equipment shall be so constructed and maintained as to create no undue hazard to previously installed facilities.

(2) Where power conductors and communication circuits are carried on separate parallel pole-lines, such lines shall be spaced apart a distance such that one line cannot fall upon the other line in the event of a breaking of a pole.

(3) Where lines cross such that the conductors of one circuit may fall upon the conductors of another circuit, the power conductors shall be installed such that the clearance between the upper conductors at maximum sag and the lower conductors assumed to form a straight line between its points of support is at least as per Specification 1 item 4.

(4) Where power conductors and communications circuits are carried on the same pole, the power conductors shall be installed such that the clearance between the upper conductors at maximum sag and the lower conductor is as per Specification 2.

(5) Subrules (3) and (4) shall not apply to a service span from a pole to a building.

75-304 Location of Conductors on Primary Lines

(1) Where primary line conductors cross other conductors of lower voltage, the conductors of the circuit having the highest voltage shall be installed above such other conductors of lower voltage and shall have minimum clearances as per Specification 1, items 1 and 2.

(2) The neutral conductor associated with primary line shall be located below the phase conductors and shall have minimum clearances as per Specification 1, item 2 and be a minimum of 200 mm below the transformer.

75-306 Clearances in Service Span. Where the voltage of power conductors is not more than 750 V, the distance between the power conductors and a communication drop-wire in the service span from a pole to a building shall be not less than 300 mm.

75-308 Span with Secondary Service Line Attached to Building or Mobile Homes

(1) Subject to Subrule (2), the span of neutral supported cables types NS-1 and NSF-2 from the point where the secondary service line is attached to a building to the nearest pole shall not be longer than 38 m.

(2) The span from the point where the secondary overhead service line is attached to a mobile home or similar structure to the nearest pole or other point of attachment shall not be longer than 10 m.

75-310 Primary and Secondary Lines Clearances

(1) The poles which support the phase conductor of a primary line shall be so located and of such height as to afford a clearance of 7 m measured vertically between the conductors under maximum sag conditions and the ground.

(2) Notwithstanding Subrule (1) for high voltage line installations where plans are submitted for examination to the inspection department, the clearances listed in Table 34 are acceptable.

(3) The primary line neutral shall be considered a secondary conductor and shall have the same minimum vertical clearance as specified in Subrule (4).

(4) Subject to Rule 6-206 the poles which support the conductors of a secondary line shall be so located and of such height as to afford a clearance as per Rule 6-112(2).

(5) Where a consumer desires to install the conductors of a primary or secondary line across a public road, the crossing shall not be made without a written permission from the supply authority and from the authority having jurisdiction over the road and having the minimum clearance as specified in Subrule (1).

75-312 Clearances of Conductors from Buildings

(1) An overhead primary line conductor shall be kept at least 3 m at maximum conductor swing measured horizontally from a building.

(2) Primary line conductors shall not be installed over buildings unless the installation is lawful under Rule 2-030, and work shall not begin until the plans and specifications for the work are approved in accordance with Rule 2-010.

(3) No building, mobile home or structure shall be placed or constructed within at least 3 m at maximum conductor swing measured horizontally from the nearest conductor of an overhead primary line.

75-314 Clearances for Other Structures

(1) Notwithstanding Rule 36-110, conductors of a primary line:

(a) Shall not be routed closer than 12 m measured horizontally from silos;

(b) Shall not be erected over wells from which pump rods may be lifted and come in contact with the conductors;

(c) Shall have sufficient clearance near flagpoles or antennae to permit the structure to fall in an arc, without touching the line conductors at rest;

(d) Shall not be located within 6 m, measured horizontally from wind-mills or like structures to the closest conductor, with the conductor at rest; and

(e) Shall have a minimum vertical clearance of 3.1 m above fencing at maximum sag.

(2) Conductors of a secondary line shall not be installed closer than 1 m measured horizontally from structures.

(3) The poles and equipment associated with a primary or secondary line shall be located and suitably protected so as to avoid the possibility of damage from contact with vehicles.

75-316 Overhead Conductors. Primary line conductors shall be bare and not less than No. 2 AWG ACSR.

75-318 Sag Between Poles. Open wire bus, neutral supported cable and ACSR shall be installed so that the sag of the conductors between poles is determined by using Tables 105 or 107 to 112 appropriate to the size and type of conductor being installed and with respect to applicable span and temperature.

75-320 Sag Between Pole and Building. Open wire bus, neutral supported cable and ACSR. shall be installed so that the sag of the conductors between a pole and a building is determined by using Tables 105 or 107 to 112 appropriate to the size and type of conductor being installed and with respect to applicable span and temperature.

75-322 Compression Connections. Compression connectors are required for all overhead current carrying connections

75-324 Attachment of Secondary Line Conductors

(1) Secondary service conductors:

(a) Shall terminate on a dead-end rack of a type shown in Specification 35; or

(b) Shall be attached to a pole in accordance with either Specification 36, 37, 38; or 39.

(c) Shall be attached to the timber framing of a building by a one-wire rack such as shown in Fig 1 of Specification 35.

(2) Where it is necessary to install an approved service mast to meet the requirements of Rule 6-114 the mast shall be attached to the building as shown in Specification 28 and guyed, if necessary, in accordance with the Note on Specification 28.

75-326 Tree Trimming

(1) The owner of a private line shall provide complete protection to the line from trees and other forms of woody growth in compliance with a code or standard under a rule or by-law of the supply authority concerning tree trimming.

(2) Where there is no applicable code or standard under a rule or by-law of the supply authority concerning tree trimming, all trees and woody growth adjacent to a line shall be trimmed so that minimum clearance to the nearest conductor horizontally under conductor swing and vertically at a maximum sag shall be:

(a) 1 m for secondary lines;

(b) 4 m for primary lines.

75-328 Submarine Power Cable. Submarine power cables shall be manufactured to either NEMA Standard NO. WC 7-1988/S-66-524, or Ontario Hydro Standard M355, or such other standards as may be approved.

D) Grounding And Bonding

75-402 Crossarms. Steel crossarms shall be connected to a ground electrode where porcelain dead-end insulators are used with a:

(a) #4 AWG stranded bare copper conductor for 27.6 kV and below;

(b) #1/0 AWG stranded bare copper conductor for voltages greater than 27.6 kV.

75-404 Grounding Overhead Installations. Grounding of pole-mounted equipment, hardware, including crossarms in accordance with Subrule 75-402, and/or system neutral shall be installed in accordance with Specification 34.

75-406 Grounding Conductors

(1) Metal guards or metal conduit shall not be used as protection for the grounding conductor in locations accessible to livestock.

(2) The grounding conductor run underground to the ground electrode shall be:

(a) Buried in the earth to a depth not less than 250 mm below the ground level;

(b) Not be located within 3 m of a doorway; and

(c) Not be located in an area normally frequented by livestock.

75-408 Grounding the Service Box on a Transformer Pole

(1) Where a service box is installed on a transformer pole:

(a) The ground electrode shall be installed at the pole by the supply authority;

(b) The consumer shall provide a grounding conductor for the non-current-carrying metal parts of the service box; and

(c) The supply authority shall connect the grounding conductor to the ground wire on the pole.

(2) All non-current-carrying metal parts of the service box shall be grounded.

75-410 Grounding of Service Equipment on Transformer Poles

(1) Where the service equipment is installed on a transformer pole:

(a) The neutral conductor of the consumer's service shall not be grounded by any person other than an employee of the supply authority;

(b) (i) The neutral conductor shall be brought into the service box;

(ii) The neutral conductor shall be installed with both the line and the load conductors on the service pole, and notwithstanding the provisions of Rule 4-020, the neutral conductor may be bare;

(c) The contractor shall bond the non-current-carrying metal parts of the service equipment to a grounding conductor sized in accordance with Rule 10-812 and at least 500 mm of the grounding conductor shall extend outside the weatherproof enclosure.

(2) Where the transformer is owned by the supply authority, an installation is acceptable provided the supply authority attaches the grounding conductor to the supply authority's ground wire by means of a solderless connector.

(3) Where the transformer is privately owned, the owner shall supply and install all grounding in accordance with Section 10.

75-412 Grounding/Bonding in Milking Areas

(1) (a) Livestock waterers, wire mesh, grates, metallic water pipes, stanchions, water bowls, vacuum lines, grain feeders, gates, support posts and other metals shall be bonded together by a separate stranded copper conductor not smaller than No. 6 AWG;

(b) The metallic equipment bonded in Subrule (a) shall be grounded and connected to the system neutral ground at the distribution panel by a separate single stranded copper conductor not smaller than No. 6 AWG.

(2) In milking parlors concrete floors shall have a 6 inch by 6 inch by 9 gauge wire mesh, and bonding and grounding shall be in accordance with Subrule (1).

75-414 Multiple Grounding on Primary Lines System Neutral The system neutral on primary distribution lines shall be multi-grounded;

(1) The standard number of grounds per kM of circuit shall be 4;and

(2) The neutral potential shall not exceed 10 volts rms to a remote ground at any point under steady-state conditions.

E) Services

75-502 Guys On Service Masts

(1) Where the distance from the upper support clamp on the service mast to the point of attachment exceeds 1.5 m, or where the span exceeds 30 m, or the weather loaded tension is known to exceed 600 pounds, the mast shall be guyed in accordance with Specification 28.

(2) Guy wires shall:

(a) Be of stranded steel;

(b) Have a diameter of at least 6 mm (1/4 inch); and

(c) Be galvanized or corrosion resistant.

75-504 Service Box Installation

(1) Where a service box is installed on a pole which supports the conductors of a secondary service only, the midpoint of the meter shall be located 1730 $\pm$100 mm from grade.

(2) Where a service box is installed on a transformer pole, no equipment other than that shown in Specification 40 shall be placed on the pole, except that one temporary service may be attached in addition to the permanent service.

(3) Service boxes shall not be installed on poles located on a public road.

(4) The following requirements shall apply to the Central Metering System (CMS):

(a) A standard pole-mounted distribution transformer without a secondary breaker or pole-mounted switch shall be used to supply multibuilding installations;

(b) The method of entry of conductors into a building shall be in accordance with Rules 6-206 and 6-302;

(c) Each building shall have a main service box at point of entry;

(d) The service equipment shall be bonded to the neutral;

(e) A ground electrode shall be used at each service box in accordance with Rule 10-702;

(f) (i) New overhead yard wiring shall be neutral supported cable with a minimum of No. 2 AWG aluminum, and when in parallel shall comply with Rule 12-108;

(ii) New overhead yard wiring with current carrying capacity over 200 A, open wire bus with a bare neutral conductor properly spaced shall be permitted;

(g) The minimum ampacity of overhead or underground conductors feeding more than one service or building shall be based on 80 per cent of the sum of the ratings of all service boxes supplied.

(h) Transformer pole hardware and metering equipment shall be in accordance with Specification 41 and Specification 42, Fig 1, and Specification 43;

(i) If metering is located on other than a transformer pole the meter socket shall be connected to the ground electrode and the system neutral in accordance with Specification 42 Fig 2;

(j) Pole top switches may be installed to the following requirements:

(i) The switch shall be approved for the purpose;

(ii) The minimum rating of a transfer switch shall be equal to or greater than 80 per cent of the sum of all service boxes supplied

(iii) The minimum clearances on the pole shall be those shown on Specification 43;

(iv) Underground services shall be in accordance with the requirements of Rule 6-300;

(k) All equipment mounted on a pole shall be mounted on the same $^1/_3$ continuous pole circumference leaving the remaining $^2/_3$ of the continuous pole circumference clear for climbing purposes;

(l) CMS type service shall not have more than four subdivisions of the service extending from one pole.

(m) Neutral Voltage Mitigation Devices Installed on Transformer Poles

(i) The device shall be approved.
(ii) All grounding conductors shall be insulated (minimum 600 volt) and shall be not less than # 4 AWG copper.
(iii) Each grounding conductor shall have mechanical protection up to the neutral voltage mitigation device as per specification 34.
(iv) Primary and secondary ground electrodes shall be spaced no less than 5M apart.
(v) A permanent warning sign shall be installed directly below the device and shall read: "WARNING – Primary and secondary grounding conductors shall be interconnected prior to disconnecting this device for service or removal.", or equivalent.

75-506 Conductors at Service Switch. Conductors connected to the load side of a service switch shall not be installed in a conduit with conductors connected to the line side of the service switch.

F) Installations of Electrical Equipment

75-602 Pole Mounted Lights

(1) Where pole mounted lights are installed on poles carrying the conductors of a primary line, the lighting fixture shall be at least 3 m below the primary conductors.

(2) Where lights are installed on a pole, there shall be signs cautioning that high voltage is present and advising that lamp changing is to be done only by qualified persons.

(3) Notwithstanding Subrule (1) where the supply authority owns the pole mounted lights the clearance requirement does not apply.

(4) Where pole mounted lights are controlled from more than one point by switches, each switch shall be so wired and connected that the identified (neutral) conductor runs directly to the light or lights controlled by it.

(5) The identified conductor of the circuit supplying the pole mounted light may be connected to the neutral conductor of a feeder or subfeeder.

(6) Each lighting circuit shall have adequate overcurrent protection, a weatherproof in-line fuseholder assembly is acceptable for this purpose.

(7) All non-current-carrying metal parts of a lighting unit shall be bonded to ground in accordance with Section 10.

75-608 Lighting Fixtures

(1) Where dust or chaff is likely to collect on lamps they shall be:

(a) Mounted vertically; and
(b) In totally enclosed gasketed type globes.

(2) Keyless weatherproof pigtail lampholders shall be installed at lamp outlets in barns, stables and out-buildings, subject to Subrules (4), (5) and (6).

(3) In milk parlours, low temperature ballasted fluorescent or standard incandescent lighting fixtures may be used.

(4) In milk houses, classified as a Category 1 location, in accordance with Section 22 of this Code lighting fixtures shall be constructed so that the water cannot enter or accumulate within the fixture.

(5) Where fixtures are subject to mechanical damage the fixtures shall be:

(a) A weatherproof pigtail type with gasketed type globe; or

(b) Any other approved type installed at an elevation of at least 3 m.

(6) High intensity discharge lighting may be used for yard lighting and high bay areas.

75-610 Silo Unloaders

(1) General:

(a) Silo unloaders shall be approved;

(b) All boxes and fittings installed outdoors or in silos shall be weatherproof.

(2) Motors:

(a) Silo motors shall be either totally enclosed or fitted with suitable screens to prevent entrance of foreign objects into the ventilating passages of the motor;

(b) The motors shall have individual overload protection in accordance with Rules 28-300 and 28-302;

(c) Automatic resetting overload devices are not permitted;

(d) The motors shall be controlled by means of a magnetic motor controller, with a control station in the silo, capable of preventing the motors being started from any other location;

(e) A jog push-button shall be provided at the control station in the silo unless a local or remote operation selector switch is available at the controller;

(f) A suitable disconnecting means shall be installed within sight of the controller in accordance with Rule 28-604.

(3) Wiring Method:

(a) The wiring from a building to a silo shall be installed either underground, in accordance with Rule 12-012, or overhead in accordance with Rule 75-504;

(b) Silo Riser:

(i) The riser conductors on the exterior wall of the silo shall be enclosed in rigid conduit, shall be types MI, AC or NMWU cables or flexible cord mechanically protected as required;

(ii) Flexible cord assemblies noted in Paragraph (c) may be used provided that the cord assembly is suitably supported and protected and is provided with a take-up reel, or equivalent, to prevent slack cable problems;

(iii) The riser conductors shall terminate in a weatherproof enclosure or box wherever necessary;

(c) Power Supply Cords. The cord assembly shall consist of:

(i) A cable for hard usage outdoors in wet location as listed in Table 11; or

(ii) Type SJO or SO;

(d) Support of Cord Assembly. The cord assembly shall be supported by suitable strain relief clamps.

75-612 Standby Generators

(1) Standby generators shall not be connected to a wiring system except through a double-throw switch which will prevent feedback on the supply authority's system.

(2) The wiring method and grounding of permanently installed standby generators shall be in accordance with Sections 10 and 12.

(3) In addition to requirements of Subrule (1), portable standby generators shall meet the following requirements:

(a) Where the portable standby generator neutral is isolated from ground, the cable assembly shall contain a separate green grounding conductor in addition to the identified neutral conductor;

(b) For portable standby generators rated 60 A and less, the conductors shall terminate in an approved receptacle as listed in Diagrams 1 and 2;

(c) For portable standby generators rated more than 60 A, the conductors shall terminate in a receptacle that provides simultaneous disconnection of all ungrounded conductors and incorporates a rejection feature prohibiting the interconnection of ungrounded and neutral and/or grounding conductors;

(d) Where a double throw transfer is mounted at a service entrance, the transfer switch shall be located on the load side of the service entrance switch;

(e) Pole top transfer switches used in conjunction with Central Metering Systems shall be installed in accordance with Specification 41;

(f) The conductors used in conjunction with a portable standby generator and which are to be installed on the pole shall be enclosed in rigid conduit and terminate at the generator connection point in a weatherproof box complete with threaded hub;

(g) At least one ground rod shall be installed at every location where the generator may be connected; and

(h) Where a receptacle for a standby generator is not located on the same pole as the corresponding transfer switch, the point of attachment on the pole bearing the switch for the conductors from the receptacle shall be directly below the switch.

75-614 Hazardous Locations

(1) For the purpose of this Rule, there are two categories of grain dust producing locations as follows:

(a) Farms—where the product is being produced only for use on the particular farm;

(b) Commercial Farms—where the product is being produced for resale or is a custom preparation for others or where the amount of material handled is large as compared to what might be processed on the farm.

(2) The requirements of Table 106 shall be applied to determine the wiring method in either of the locations listed in Subrule (1) hereof.

TABLE 100
(See Rule 75-222, 75-230 and 75-266)
Minimum Insulation on Steel or Concrete Poles

System Voltage	Insulator Type	
	Porcelain	Polymer
	Insulator Class	
2.4/4.16 – 8/13.8 kV	(ANSI) PIN INSULATOR 55-5 *3 (ANSI) LP 57-1L and 57-1S *5	(CEA) DS15 *1 (CEA) LP15 *2
14.4/24.9 & 16/27.6 kV	(ANSI) PIN INSULATOR 56-3 *4 (ANSI) LP 57-2L and 57-2S *5	(CEA) DS28 *1 (CEA) LP28M *2
44 kV	(ANSI) PIN INSULATOR 56-5 *4 (ANSI) LP 57-5L and 57-5S *5	(CEA) DS46 *1 (CEA) LP46M *2

ANSI – American National Standard Institute
*3 - C29.5
*4 - C29.6
*5 - C29.7
CEA – Canadian Electrical Association
*1 - LWIWG - 01
*2 - LWIWG - 02

TABLE 101
(See Rule 75-234)
Concrete Pole Class Equivalency

Class	Equivalent Class of Wood Poles
E	4
F	3
G	2
H	1

TABLE 102 (see Appendix B)
(See Rule 75-206)
WOOD POLE SPECIES and TREATMENT COMBINATIONS

TREATMENT PRESERVATIVE	ACCEPTABLE WOOD POLE SPECIES
PENTACHLOROPHENOL (PCP) **CCA-PEG** **CCA-ET (Oil)** **CCA** **ACQ**	**COAST DOUGLAS FIR** **INTERIOR DOUGLAS FIR** **WHITE SPRUCE** **RED SPRUCE** **WESTERN LARCH** **JACK PINE** **WHITE PINE** **RED PINE** **LODGEPOLE PINE** **SOUTH YELLOW PINE** [1] **PONDEROSA PINE** **WESTERN HEMLOCK** **ALASKA YELLOW CEDAR** **WESTERN RED CEDAR**
CCA - WR	**RED PINE**
COPPER NAPHTHENATE	**COAST DOUGLAS FIR** **JACK PINE** **RED PINE** **LODGEPOLE PINE** **SOUTH YELLOW PINE** **WESTERN RED CEDAR**

[1] Southern Yellow Pine—Penta, which shall have a minimum of .38 pcf(pounds per cubic foot) of treatment preservative level, be kiln dried, and be marked "SPP .38" and "KD".

TABLE 103
(See Rule 75-206)
POLE LIMITATIONS
MAXIMUM TRANSFORMER WEIGHT IN KILOGRAMS

Pole Lengths Meters(Feet)*	Transformer Mounting	Pole Class			
		2	3	4	5
12.2(40)	Direct	--	1022	613	386
	Cluster	1771	1339	840	604
13.7(45)	Direct	1249	749	498	318
	Cluster	1566	1067	766	545

* Lesser pole lengths are acceptable for stand alone transformer pole installations with no overhead lines attached, provided the vertical height to any live part is at least 7m (23 ft.) above grade level.

TABLE 104
(See Rule 75-224, 75-238, 75-242)
Depth of SETTING OF POLES in Soil

Pole Length Metres (Feet)	Minimum Depth of Pole(Metres)	*Max. Height* of Marking (Meters) above Grade
9.2 (30)	1.7	1.3 ± 0.05
10.7 (35)	1.7	1.3 ± 0.05
12.2 (40)	1.8	1.2 ± 0.05
13.7 (45)	2.0	1.1 ± 0.05
15.2 (50)	2.1	1.0 ± 0.05
Col. 1	Col. 2	Col. 3

TABLE 105
(See Rule 75-318, 75-320)
SAG OF NEUTRAL SUPPORTED CABLE
(Ruling Span — 30.0 m)

Temp. °C	Triplex: 2-No. 4 Poly. AL. 1-No. 4 Bare ACSR				Triplex: 2-No. 2 Poly. AL. 1-No. 2 Bare ACSR				Triplex: 2-No. 1/0 Poly. AL. 1-No. 1/0 Bare ACSR				Triplex: 2-No. 3/0 Poly. AL. 1-No. 1/0 Bare ACSR				Triplex: 2-No. 4/0 Poly. AL. 1-No. 3/0 Bare ACSR			
	Span in Metres (m)				Span in Metres (m)				Span in Metres (m)				Span in Metres (m)				Span in Metres (m)			
	15	23	30	38	15	23	30	38	15	23	30	38	15	23	30	38	15	23	30	38
	Sag in Millimetres				Sag in Millimetres				Sag in Millimetres				Sag in Millimetres				Sag in Millimetres			
−29	127	279	508	787	203	432	762	1194	254	584	1016	1575	305	686	1194	1880	406	889	1600	2489
−18	152	330	559	838	203	457	813	1270	279	584	1041	1626	305	686	1219	1905	406	914	1626	2540
− 0	152	356	635	914	229	483	864	1346	279	610	1092	1702	305	711	1245	1956	406	940	1651	2591
−16	178	406	711	1118	229	533	940	1473	279	635	1143	1778	330	711	1270	1981	432	940	1676	2616
−32	203	432	762	1194	254	559	991	1549	305	660	1168	1829	330	737	1321	2057	432	965	1727	2692

Ruling span formula:
Ruling span = average span + $^{2}/_{3}$ (maximum span - average span)

TABLE 106
(See Rule 75-614)
HAZARDOUS LOCATIONS

Type of Installation	Wiring	Switches	Motors	Fixtures
Farms				
Grain Grinders Rollers Hammer Mills Feed Mixing	As Required by Section 12 and/or Section 22	Dust-Tight	Totally Enclosed	Dust-Tight
Commercial Farms				
Chopping Mills Feed Mixing Plants Flour Mills Alfalfa Grinding and Processing Mills Terminal Grain Elevators	Rigid Metallic Conduit, Mineral Insulated Cable or Aluminum Sheathed Cables as Required by Rule 18-202 (1)	Class II, Group `G'	Class II, Group `G'	Class II, Group `G'

Table 107
(See Rule 75-318, 75-320)
SAGS AND TENSIONS FOR #2 ACSR (6/1) WITH 60m (200´) RULING SPAN

Initial Sags and Tensions for Stringing											
Ambient Temperature	**Span**								**Tension**		
	40m	45m	50m	55m	60m	65m	70m	75m			
	Sag cm								lb	kN	%RTS
-20ºC	21	27	33	40	48	56	65	75	274	1.2	9.8
-10ºC	27	34	42	51	61	72	83	95	221	1.0	7.9
0ºC	33	42	51	62	74	87	101	116	184	0.8	6.6
10ºC	37	47	58	71	84	99	114	131	158	0.7	5.7
20ºC	43	55	67	82	97	114	132	152	140	0.6	5.0
30ºC	48	60	74	90	107	126	146	167	126	0.6	4.5

Final Sags and Tensions for Design												
Loading Condition			**Span**								**Tension**	
Cond Temp	Wind N/m²	Ice mm	40m	45m	50m	55m	60m	65m	70m	75m		
			Sag cm								lb	kN	%RTS
-20ºC	400	12.5	64	82	101	122	145	170	197	227	1090	4.8	39.1
30ºC	0	0	55	70	86	104	124	146	169	194	109	0.5	3.9
50ºC	0	0	63	80	99	119	142	167	193	222	95	0.4	3.4
100ºC	0	0	80	101	125	151	180	211	245	281	75	0.3	2.7

Table 108
(See Rule 75-318, 75-320)
SAGS AND TENSIONS FOR #2 ACSR (6/1) WITH 75m (250´)RULING SPAN

Initial Sags and Tensions for Stringing											
Ambient Temperature	**Span**								**Tension**		
	55m	60m	65m	70m	75m	80m	85m	90m			
	Sag cm								lb	kN	%RTS
-20ºC	34	41	48	56	64	73	82	92	326	1.4	11.7
-10ºC	42	50	59	68	78	89	100	112	271	1.2	9.7
0ºC	49	58	68	79	91	104	117	131	229	1.0	8.2
10ºC	58	68	80	93	107	122	137	154	199	0.9	7.1
20ºC	64	76	89	104	119	135	153	171	176	0.8	6.3
30ºC	71	84	99	115	132	150	170	190	159	0.7	5.7

Final Sags and Tensions for Design												
Loading Condition			**Span**								**Tension**	
Cond Temp	Wind N/m²	Ice mm	55m	60m	65m	70m	75m	80m	85m	90m		
			Sag cm								lb	kN	%RTS
-20ºC	400	12.5	105	125	147	171	196	223	252	282	1270	5.6	45.5
30ºC	0	0	84	100	118	137	157	179	202	226	134	0.6	4.8
50ºC	0	0	97	115	135	157	180	205	231	259	118	0.5	4.2
100ºC	0	0	122	145	170	197	226	257	290	325	93	0.4	3.3

Table 109
(See Rule 75-318, 75-320)
SAGS AND TENSIONS FOR #1/0 ACSR (6/1) WITH 60m (200´) RULING SPAN

Initial Sags and Tensions for Stringing											
Ambient Temperature	**Span**								**Tension**		
	40m	45m	50m	55m	60m	65m	70m	75m			
	Sag cm								lb	kN	%RTS
-20ºC	23	29	35	43	51	60	69	80	426	1.87	10.0
-10ºC	27	34	42	51	61	72	83	95	345	1.52	8.1
0ºC	33	42	51	62	74	87	101	116	288	1.27	6.7
10ºC	38	48	60	72	86	101	117	134	249	1.10	5.8
20ºC	43	55	67	82	97	114	132	152	220	0.97	5.1
30ºC	48	61	76	92	109	128	147	170	198	0.87	4.6

Final Sags and Tensions for Design													
Loading Condition			**Span**								**Tension**		
Cond Temp	Wind N/m²	Ice mm	40m	45m	50m	55m	60m	65m	70m	75m			
			Sag cm								lb	kN	%RTS
-20ºC	400	12.5	56	71	88	107	127	149	173	198	1366	6.0	31.9
30ºC	0	0	54	69	85	103	122	143	166	191	176	0.8	6.3
50ºC	0	0	63	80	99	119	142	167	193	222	142	0.6	5.8
100ºC	0	0	80	101	125	151	180	211	245	281	120	0.5	4.3

Table 110
(See Rule 75-318, 75-320)
SAGS AND TENSIONS FOR #1/0 ACSR (6/1) WITH 75m (250´) RULING SPAN

Initial Sags and Tensions for Stringing											
Ambient Temperature	**Span**								Tension		
	55m	60m	65m	70m	75m	80m	85m	90m			
	Sag cm								lb	kN	%RTS
-20ºC	35	42	50	57	66	75	85	95	513	2.3	12.0
-10ºC	42	50	59	68	78	89	100	112	426	1.9	10.0
0ºC	51	60	71	82	94	107	121	135	360	1.9	8.4
10ºC	58	68	80	93	107	122	137	154	313	1.4	7.3
20ºC	64	76	89	104	119	135	153	171	278	1.22	6.5
30ºC	73	86	101	118	135	154	173	194	251	1.10	5.9

Final Sags and Tensions for Design													
Loading Condition			**Span**								**Tension**		
Cond Temp	Wind N/m²	Ice mm	55m	60m	65m	70m	75m	80m	85m	90m			
			Sag cm								lb	kN	%RTS
-20ºC	400	12.5	91	109	128	148	170	193	218	245	1596	7.0	37.3
30ºC	0	0	82	97	114	132	152	173	195	219	219	1.0	5.1
50ºC	0	0	94	112	131	152	175	199	225	252	191	0.8	4.5
100ºC	0	0	120	143	168	194	223	254	286	321	150	0.7	3.5

Table 111
(See Rule 75-318, 75-320)
SAGS AND TENSIONS FOR #3/0 ACSR (6/1) WITH 60m (200´) RULING SPAN

Initial Sags and Tensions for Stringing											
Ambient Temperature	**Span**								**Tension**		
	40m	45m	50m	55m	60m	65m	70m	75m			
	Sag cm								lb	kN	%RTS
-20ºC	21	27	33	40	51	56	65	75	686	1.2	10.3
-10ºC	27	34	42	51	61	72	83	95	554	1.0	8.3
0ºC	33	42	51	62	74	87	101	116	462	0.8	6.9
10ºC	37	47	58	71	86	99	114	131	398	0.7	5.9
20ºC	43	55	67	82	96	114	132	152	351	0.6	5.3
30ºC	48	60	74	90	107	126	146	167	317	0.6	4.8

Final Sags and Tensions for Design													
Loading Condition			**Span**								**Tension**		
Cond Temp	Wind N/m²	Ice mm	40m	45m	50m	55m	60m	65m	70m	75m			
			Sag cm								lb	kN	%RTS
-20ºC	400	12.5	50	63	78	94	112	131	152	175	1756	7.7	26.3
30ºC	0	0	54	69	85	103	122	143	166	191	282	1.3	4.2
50ºC	0	0	61	77	95	115	137	161	186	214	247	1.1	3.7
100ºC	0	0	79	100	124	150	178	209	242	278	192	0.8	2.9

Table 112
(See Rule 75-318, 75-320)
SAGS AND TENSIONS FOR #3/0 ACSR (6/1) WITH 75m (250´) RULING SPAN

Initial Sags and Tensions for Stringing											
Ambient Temperature	**Span**								**Tension**		
	55m	60m	65m	70m	75m	80m	85m	90m			
	Sag cm								lb	kN	%RTS
-20ºC	35	42	50	57	66	75	85	95	810	3.6	12.1
-10ºC	42	51	59	69	79	90	101	114	672	3.0	10.1
0ºC	51	60	71	82	94	107	121	135	570	2.5	8.5
10ºC	58	68	80	93	107	122	137	154	495	2.2	7.4
20ºC	67	79	93	108	124	141	159	179	440	1.9	6.6
30ºC	73	86	101	118	135	154	173	194	398	1.7	6.0

Final Sags and Tensions for Design													
Loading Condition			**Span**								**Tension**		
Cond Temp	Wind N/m²	Ice mm	55m	60m	65m	70m	75m	80m	85m	90m			
			Sag cm								lb	kN	%RTS
-20ºC	400	12.5	81	96	113	131	150	177	193	216	2046	9.0	30.6
30ºC	0	0	82	97	114	132	152	173	195	219	352	1.6	5.3
50ºC	0	0	93	111	130	151	173	197	222	249	307	1.4	4.6
100ºC	0	0	119	141	166	193	221	251	284	318	240	1.1	3.6

TABLE 113
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TABLE 114
(See Specification 6 and 7)
TABLE OF CRIB HEIGHTS FOR WOOD POLE IN SWAMP

CRIB HEIGHTS							
POLE HEIGHT IN m (ft)	SETTING "A" BUTT OF POLE RESTING ON OR PENETRATING AT NORMAL SETTING DEPTH						SETTING "B" BUTT OF POLE NOT REACHING SOLID EARTH AT NORMAL SETTING EARTH
	DEPTH OF PENETRATION						
	30 cm(1')	60 cm(2')	90 cm(3')	120 cm(4')	150 cm(5')	180 cm(6')	
	HEIGHT OF CRIB IN cm (ft)						
12.2(40')	120(4)	90(3)	60(2)	60(2)	*	*	120(4)
13.7(45')	120(4)	90(3)	60(2)	60(2)	*	*	120(4)
15.2(50')	137(4.5)	106(3.5)	76(2.5)	60(2)	60(2)	*	137(4.5)
16.7(55')	150(5)	120(4)	90(3)	60(2)	60(2)	*	150(5)
18.2(60')	167(5.5)	137(4.5)	106(3.5)	76(2.5)	60(2)	*	167(5.5)
19.8(65')	167(5.5)	137(4.5)	106(3.5)	76(2.5)	60(2)	*	167(5.5)
21.3(70')	180(6)	150(5)	120(4)	90(3)	60(2)	*	180(6)
22.8(75')	180(6)	150(5)	120(4)	90(3)	60(2)	*	180(6)
24.3(80')	198(6.5)	167(5.5)	137(4.5)	106(3.5)	76(2.5)	60(2)	198(6.5)

NOTES:

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1. MINIMUM HEIGHT OF CRIB FOR ANY CONDITION SHALL BE 60cm(2').

Appendix B

Appendix B, Rule 2-010, Add a new Note:

The intent is to have the submittor file with the Inspection Department complete wiring plans and specifications relating to the proposed work

a) Before any request for proposal or other document inviting tenders, bids or quotations for work on the installation, or

b) Within the time specified by the Inspection Department.

Proceeding with the job to the energization point without prior approval, is done solely at the contractors risk.

Essential information to be supplied as specified by the Inspection Department

Appendix B Note to Rule 26-700-(14) - Add a new Note:

Distance of 1 m is measured from edge of kitchen sink

Appendix B Note to Rule 75-216 - Add a new Note:

For situations where aggressive corrosion exists, the steel pole manufacturer shall be consulted for appropriate additional below-grade corrosion protection such as polyurethane coatings or other proven methods. Where the embedded section of a steel pole is fully coated, proper grounding can be achieved by utilizing the threaded insert provided above the groundline on the pole to connect to a driven ground rod.

Appendix B Note to Rule 75-608 - Add a new Note:

Totally enclosed gasketed fixtures are available with a 105^{o}C rating and these fixtures cannot be directly wired with NMSC. The wiring method used must have a temperature rating at least equal to the rating of the lighting fixture where it enters the fixture's junction box.