CUSTOMER METERING SPECIFICATIONS

Festival Hydro INC.

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1.0 Festival Hydro Standard Metering Installations

Supply Voltage	Phases	Wires	Service Size and Details		Details
120/240V	1	3	0 – 200A	4-Jaw Meter Base	Sections 2.0 and 3.0
120/240V	1	3	201 – 400A	5-Jaw Meter Base with integrated CT, 5th jaw in 9 o'clock position.	Sections 2.0 and 4.0
120/208V	1	3	0 – 200A	Network Service 5-Jaw Meter Base with 5th jaw in 9 o'clock position.	Sections 2.0 and 3.0
	3	4	0 – 200A	7-Jaw Meter Base	Sections 2.0 and 5.0
	3	4	201 – 400A	ITs in Cabinet	Sections 2.0 and 6.0
			>400A	ITs in Customer Switchgear	Sections 2.0 and 7.0
347/600V	3	4	0 – 200A	7-Jaw Meter Base	Sections 2.0 and 8.0
			201 – 400A	ITs in Cabinet	Sections 2.0 and 9.0
			>400A	ITs in Customer Switchgear	Sections 2.0 and 10.0
>600V	3	4	Customers supplied at voltages greater than 600V shall be primary metered Please consult with Festival Hydro.		
Distributed Generation			Please consult with Festival Hydro.		

2.0 General Notes

1. The ampacity for services supplied at 600V or less are limited by the maximum transformer size supplied by Festival Hydro. Please consult Section 2.3.4.2.2 of Festival Hydro's Conditions of Service.

2. The Customer shall provide and maintain at all times, proper working space and a clear egress path around all metering installations as per Sections 2-308, 2-310, and 38-005 of the Ontario Electrical Safety Code (OESC) and ESA Bulletin 2-9-4.

3. A lighting level of 65-75 footcandles shall be maintained around all indoor metering installations.

4. All metering equipment shall not be installed within 1000mm of a natural gas discharge opening or 3000mm of a propane discharge opening unless the installation meets the OPCO or OPSO requirements of ESA Bulletin 2-10-15 in which the distance to a natural gas discharge opening shall be no less than 300mm.

5. The location of the metering shall comply with Section 6-408 of the OESC, and if installed outdoors, the metering shall not be above central air conditioners, window wells, or any obstacles that prevents access to meter.

6. All metering equipment shall not be installed in an area that is, or may become, a confined space.

7. The Customer shall ensure that meters located adjacent to narrow driveways, or other areas deemed hazardous, be physically protected to the satisfaction of Festival Hydro. Meter protection is defined as a steel pipe 100 mm (4 in) in diameter filled with concrete, extending from grade level to 150-200 mm (6-8 in) below the meter base and placed directly in front of the base. Other types of meter protection will be approved at the discretion of Festival Hydro.

8. All Customer owned loads, including metering and load control circuits, must be installed downstream of Festival Hydro's metering.

9. Where excessive vibration may affect or damage metering equipment, adequate shock-absorbing mounting shall be provided and installed by the Customer.

10. All meter bases and meter load centres shall be installed with the meter socket in a vertical orientation such that line/supply side jaws are towards the top and the load side jaws are towards floor/ground.

11. For multi-unit metering of a single facility, all meters shall be located in a single meter location/electrical room. Separate meter rooms must be approved by Festival Hydro prior to connection.

12. If the building is a high-rise structure where a single metering room is not feasible and one or more of the electrical rooms are to be located above the main floor level, they shall be directly accessible from a hallway, which is open to the public. The door shall be clearly and permanently labelled "Electrical Room."

13. The electrical room shall be used for Customer electrical equipment and utility metering purposes only and not for general storage.

14. The Customer shall always provide unimpeded and safe access to Festival Hydro for the purpose of installing, removing, maintaining, operation or changing electric meters, as per the Electricity Act. The electrical room shall provide access from the outside, a main public hallway, or as approved by Festival Hydro and not from an adjoining room, so that it is readily accessible to Festival Hydro.

15. All doors to the electrical rooms containing Customer electrical equipment and utility metering shall be clearly and permanently labelled "Electrical Room".

16. For meters and equipment located inside buildings, Customer enclosures, or in a locked yard, the Customer must provide Festival Hydro with all keys, lock combinations, etc. required to access all meters and equipment if staff are not on site during normal business hours.

17. The Customer's main service disconnect shall have provisions for padlocking the disconnect in the open position, with the disconnect cover or door closed.

18. At the sole discretion of Festival Hydro, a Manufactured Meter Load Centre may be required for services with five (5) or more individually metered, 0-200A sub-services, and shall meet the specifications detailed in Section 11.0.

19. All metering equipment shall not be installed in a location which presents a danger to Festival Hydro staff or its Contractor, or damage to metering equipment from moving machinery, dust, fumes, moisture, vandalism etc.

20. The Customer shall be responsible for the installation of any communication antennas external to the metering cabinet if deemed necessary by Festival Hydro for adequate remote meter reading capabilities.

21. If required, the Customer shall provide all cabinet backplates to Festival Hydro a minimum three weeks before the planned in-service date.

22. The Customer shall mark the backplates with the line, load, 120V circuit, and metering cable conduit penetrations roughly indicated along with a marking indicating the installation's address.

23. The Customer shall be responsible for coordinating with Festival Hydro's Metering and Stations Department for the delivery of the instrument transformers and remote meter cabinet backplates, as well as the installation of all metering components on site.

24. Backup generation shall be connected to the Customer's service equipment downstream of Festival Hydro's metering.

25. For services with backup generation or provisions for backup generation with a capacity >10kW, or where the instrument transformer cabinets/compartments or self-contained meter bases could be energized by back-feeds, the instrument transformer cabinets/compartments or self-contained meter bases shall be labelled "MULTIPLE POINTS OF SUPPLY EXIST ON THIS SITE. THERE IS A POSSIBILITY OF ELECTRICAL BACK FEED" using permanently affixed laminated engraving warning placards (Lamicoids). Placards must be red with white lettering and the lettering must be a minimum of 12.7mm (0.5") in size.

26. For services with backup generation or provisions for backup generation with a capacity of >10kW, or where the instrument transformer cabinets/compartments or self-contained meter bases could be energized by back-feeds, a permanent, legible, up-to-date single-line diagram of the Customer's electrical service, clearly identifying all potential sources and back-feeds, as well as the isolation devices for all Festival Hydro sources and equipment, shall be provided in a conspicuous location within sight of all metering instrument cabinets/compartments or self-contained meter bases.

27. The Customer shall provide the make, model, and detailed catalogue/part number of all transfer switches with a utility source to Festival Hydro for review and approval prior to installation.

28. If required for reading the meter, Customers shall maintain adequate cellular service in the area in which the meter is installed, with a service provider as specified by Festival Hydro. If cellular service is not available or is cost prohibitive, an alternate means to read the meter such as an analog POTS/PSTN phone line may be an option at the discretion of Festival Hydro.

29. Customers upgrading or modifying their main service must also bring the metering installation in line with Festival Hydro's current metering standards, unless all deviations are approved by Festival Hydro.

30. Customers upgrading or modifying their existing main service must bring their metering and main service disconnect installation in line with the location and working space requirement as per latest version of the OESC. Festival Hydro will not allow any new or existing metering and main service disconnect equipment of a grandfathered installation undergoing an upgrade or expansion to deviate from the OESC acceptable location and working space.

31. If it is found that building additions, alterations, fencing, tree growth, or other obstructions render the meter inaccessible for reading or servicing, or poses a danger to Festival Hydro, its Contractor, or the metering equipment, the meter will be relocated to a Festival Hydro approved location at the Customer's expense. Where such a condition exists, the Customer will be granted 30 days to relocate the meter or ensure suitable access.

32. Customers with existing analog phone line (POTS/PSTN) used for meter reading shall be responsible for covering the costs and maintaining the circuit for as long as it is needed. VoIP or other digital communications are not compatible with Festival Hydro's POTS/PSTN meters.

33. The Customer shall bear all of Festival Hydro's costs associated with the metering installation for a new or upgraded service or for a Customer requested meter upgrade.

34. Festival Hydro may impose additional requirements due to the unique variables of each installation.

35. Unless otherwise specified, the latest edition of the OESC shall apply. The Customer and its agents are to familiarize themselves with, and abide by, all relevant Provincial Statutes and Municipal By-Laws. Such relevant regulations include in part, the Occupational Health and Safety Act and Regulations for Construction Projects.

3.0 Single Phase, 208V and 240V Installations, 0-200A

1. All Customer equipment shall be CSA approved and all installations must comply with the with the latest version of Festival Hydro's Conditions of Service and the Ontario Electrical Safety Code.

2. For 240V services, the Customer shall provide a minimum 12" x 17" x 5", 4-Jaw meter base.

3. For 208V services, the Customer shall provide a minimum 12" x 17" x 5", 5-Jaw meter base with the 5th jaw in the 9 o'clock position.

4. For ganged meter bases, each compartment that houses a meter shall be a minimum 8" x 15" x 5".

5. Individual and ganged meter bases located upstream of the Customer's main service equipment shall be installed outdoors.

6. The metering and main service equipment for multi-unit metering of a single facility using a splitter and individual meter bases shall be installed indoors. Each meter base shall have its own dedicated disconnect, located upstream of, and within 1000mm of the meter base.

7. The meter base shall be installed with the center of the meter socket is 1700mm (+/- 100mm) from the ground.

8. The meter base shall be installed with a working space of 500mm on both sides as measured from the center of the meter socket.

9. For meters installed indoors, the Customer shall provide a 15A, 120V dedicated receptacle located adjacent to the metering installation for Festival Hydro's use. The receptacle shall be labelled "For Supply Utility Purposes Only".

10. For underground supplied, residential services, the meter base shall use tunnel type connectors on the line side, compression lug type connectors will not be accepted.

11. The meter base shall be wired as per Measurement Canada Drawing 1302 for 240V services and Drawing 3319 for 208V services.

12. Festival Hydro shall review and approve the Customer's site layout for the meter base location and compliance with Festival Hydro's metering specifications.

4.0 Single Phase, 240V Installations, 201-400A

1. All Customer equipment shall be CSA approved and all installations must comply with the with the latest version of Festival Hydro's Conditions of Service and the Ontario Electrical Safety Code.

2. The Customer shall provide a 400A, 5-jaw meter base with test switches (Microelectric Cat#JS4B-TLHO or equivalent) with the 5th jaw in the 9 o'clock position, installed downstream of, and within 1000mm of the Customer's main service disconnect.

3. The meter base shall be installed indoors except for single unit residential installations and locations with no building (temporary construction service, sports field, etc.).

4. The meter base shall be installed with the center of the meter socket is 1700mm (+/- 100mm) from the ground.

5. The meter base shall be installed with a working space of 500mm on both sides as measured from the center of the meter socket.

6. For meters installed indoors, the Customer shall provide a 15A, 120V dedicated receptacle located adjacent to the metering installation for Festival Hydro's use. The receptacle shall be labelled "For Supply Utility Purposes Only".

7. The Customer shall be responsible for the installation and termination of all service conductors within the meter base.

8. Festival Hydro shall review and approve the Customer's site layout for the meter base location and compliance with Festival Hydro's metering specifications.

5.0 Three Phase, 208V Installations, 0-200A

1. All Customer equipment shall be CSA approved and all installations must comply with the with the latest version of Festival Hydro's Conditions of Service and the Ontario Electrical Safety Code.

2. The Customer shall provide a minimum 12" x 17" x 5", 7-Jaw meter base.

3. The meter base shall be installed indoors, downstream of, and within 1000mm the Customer's main service disconnect. For locations with no building (temporary construction service, sports field, etc.), a weatherproof, NEMA 4X, lockable enclosure with rain cap is an acceptable alternative.

4. For multi-unit metering of a single facility, each meter base shall have its own dedicated disconnect, located upstream of, and within 1000mm of the meter base.

5. The Customer shall bring a full-sized neutral conductor to the meter base even if it is not utilized by the Customer's loads.

6. The Customer shall be responsible for the installation and termination of all service conductors within the meter base.

7. The meter base shall be installed with the center of the meter socket not more than 1700mm (+/- 100mm) from the ground.

8. The meter base shall be installed with a working space of 500mm on both sides as measured from the center of the meter socket.

9. The Customer shall provide a 15A, 120V dedicated receptacle located adjacent to the metering installation for Festival Hydro's use. The receptacle shall be labelled "For Supply Utility Purposes Only".

10. Festival Hydro shall review and approve the Customer's site layout for the meter base location and compliance with Festival Hydro's metering specifications.

11. The meter base shall be wired as per Measurement Canada Drawing 3404.

6.0 Three Phase, 208V Installations, 201-400A

1. All Customer equipment shall be CSA approved and all installations must comply with the with the latest version of Festival Hydro's Conditions of Service and the Ontario Electrical Safety Code.

2. At the sole discretion of Festival Hydro, a manufactured switchgear may be required for services with multiple individually metered, three phase, 208V, 201-400A sub-services, and shall meet the specifications as detailed in Section 7.0.

3. The Customer shall provide a 36" x 36" x 12" cabinet for the metering instrument transformers (ITs), installed downstream of, and within 1000mm the Customer's main service disconnect.

4. The IT cabinet shall be installed indoors and be fabricated of minimum #16-gauge, NEMA 3R, have side-hinged doors opening at the center, equipped with three-point latching and provision for utility padlocking, shall have a removal back plate. For locations with no building (temporary construction service, sports field, etc.), a weatherproof, NEMA 4X, lockable enclosure with rain cap is an acceptable alternative.

5. The Customer shall bring a full-size neutral service conductor to the IT cabinet for the metering potential connections even if it is not utilized by the Customer's loads.

6. The Customer shall bring a minimum #6 AWG, solid green, 1000V insulated or bare cooper grounding conductor into the instrument transformer cabinet.

7. The Customer shall provide a 24" x 16" x 10" remote metering cabinet (Hydel Catalogue #74820585 or equivalent) with removable backplate for the meter.

8. The remote metering cabinet shall be installed on an outside facing, interior wall or on the exterior of the building.

9. The IT and remote metering cabinets shall be installed with the top of the cabinets being no less than 600mm and no more than 1900mm from the ground.

10. The IT and remote metering cabinets shall be installed with a working space of 500mm on both sides as measured from the center of each cabinet.

11. The remote metering cabinet shall be connected to the instrument transformer cabinet via a minimum 1 ¼" conduit, no more than 50' in length, and without the use of pulling elbows.

12. The Customer shall provide a 120V, 15A, dedicated circuit to the remote metering cabinet for Festival Hydro's use.

13. The Customer shall be responsible for the installation and termination of all service conductors within the instrument transformer cabinet in the presence of Festival Hydro or its Contractor.

14. The remote metering cabinet and instrument transformer cabinet shall be dedicated to Festival Hydro's metering equipment. No Customer owned equipment or devices shall be permitted to be installed inside these cabinets.

15. Festival Hydro shall review and approve the Customer's electrical room/metering layout for compliance with Festival Hydro's metering specifications.

7.0 Three Phase, 208V Installations, >400A

1. All Customer equipment shall be CSA approved and all installations must comply with the with the latest version of Festival Hydro's Conditions of Service and the Ontario Electrical Safety Code.

2. A permanent, legible, up-to-date single-line diagram of the Customer's electrical service, clearly identifying all potential sources, back-feeds, isolation points, and the connections for the service shall be provided in a conspicuous location within sight of the main service disconnect as well as the instrument transformer compartment.

3. The instrument transformers (ITs) shall be installed in the Customer's switchgear in an instrument transformer compartment with a minimum depth of 12" for services <=1000A and 16" for services >1000A, downstream of the main service disconnect, and installed by the switchgear manufacturer or an approved electrical contractor.

4. The instrument transformer compartment shall only be accessible through a pad-lockable access door.

5. The Customer shall bring a full-size neutral service conductor to the IT compartment for the metering potential connections even if it is not utilized by the Customer's loads.

6. The Customer shall provide a 24" x 16" x 10" remote metering cabinet (Hydel Catalogue #74820585 or equivalent) with removable backplate for the meter.

7. The remote metering cabinet shall be installed on an outside facing, interior wall or on the exterior of the building.

8. The remote metering cabinet shall be installed with the top of the cabinet being no less than 600mm and no more than 1900mm from the ground.

9. The Customer's switchgear and remote metering cabinet shall be installed with a working space of 500mm on both sides as measured from the center of the IT compartment and remote metering cabinet.

10. The remote metering cabinet shall be connected to the instrument transformer compartment via a minimum 1 ¼" conduit, no more than 50' in length, and without the use of pulling elbows.

11. The Customer shall provide a 120V, 15A, dedicated circuit to the remote metering cabinet for Festival Hydro's use.

12. The remote metering cabinet and instrument transformer cabinet shall be dedicated to Festival Hydro's metering equipment. No Customer owned equipment or devices shall be permitted to be installed inside these cabinets.

13. Festival Hydro shall review and approve the Customer's electrical room/metering layout and switchgear shop drawings for compliance with Festival Hydro's metering specifications and instrument transformers.

8.0 Three Phase, 600V Installations, 0-200A

1. All Customer equipment shall be CSA approved and all installations must comply with the with the latest version of Festival Hydro's Conditions of Service and the Ontario Electrical Safety Code.

2. The Customer shall provide a minimum 12" x 17" x 5", 7-Jaw meter base.

3. The meter base shall be installed indoors, downstream of, and within 1000mm the Customer's main service disconnect. For locations with no building (temporary construction service, sports field, etc.), a weatherproof, NEMA 4X, lockable enclosure with rain cap is an acceptable alternative.

4. For multi-unit metering of a single facility, each meter base shall have its own dedicated disconnect, located upstream of, and within 1000mm of the meter base.

5. The Customer shall bring a full-sized neutral conductor to the meter base even if it is not utilized by the Customer's loads.

6. The Customer shall be responsible for the installation and termination of all service conductors within the meter base.

7. The meter base shall be installed with the center of the meter socket not more than 1700mm (+/- 100mm) from the ground.

8. The meter base shall be installed with a working space of 500mm on both sides as measured from the center of the meter socket.

9. The Customer shall provide a 15A, 120V dedicated receptacle located adjacent to the metering installation for Festival Hydro's use. The receptacle shall be labelled "For Supply Utility Purposes Only".

10. Festival Hydro shall review and approve the Customer's site layout for the meter base location and compliance with Festival Hydro's metering specifications.

11. The meter base shall be wired as per Measurement Canada Drawing 3404.

9.0 Three Phase, 600V Installations, 201-400A

1. All Customer equipment shall be CSA approved and all installations must comply with the with the latest version of Festival Hydro's Conditions of Service and the Ontario Electrical Safety Code.

2. At the sole discretion of Festival Hydro, a manufactured switchgear may be required for services with multiple individually metered, three phase, 600V, 0-400A sub-services, and shall meet the specifications as detailed in Section 10.0.

3. The Customer shall provide a 36" x 36" x 12" cabinet for the metering instrument transformers (ITs), installed downstream of, and within 1000mm of the Customer's the main service disconnect.

4. The IT cabinet shall be installed indoors and be fabricated of minimum #16-gauge, NEMA 3R, have side-hinged doors opening at the center, equipped with three-point latching and provision for utility padlocking, shall have a removal back plate. For locations with no building (temporary construction service, sports field, etc.), a weatherproof, NEMA 4X, lockable enclosure with rain cap is an acceptable alternative.

5. The Customer shall bring a full-size neutral service conductor to the IT cabinet for the metering potential connections even if it is not utilized by the Customer's loads.

6. The Customer shall bring a minimum #6 AWG, solid green, 1000V insulated or bare cooper grounding conductor into the instrument transformer cabinet.

7. The Customer shall provide a 24" x 16" x 10" remote metering cabinet (Hydel Catalogue #74820585 or equivalent) with removable backplate for the meter.

8. The remote metering cabinet shall be installed on an outside facing, interior wall or on the exterior of the building.

9. The IT and remote metering cabinets shall be installed with the top of the cabinets being no less than 600mm and no more than 1900mm from the ground.

10. The IT and remote metering cabinets shall be installed with a working space of 500mm on both sides as measured from the center of each cabinet.

11. The remote metering cabinet shall be connected to the instrument transformer cabinet via a minimum 1 ¼" conduit, no more than 50' in length, and without the use of pulling elbows.

12. The Customer shall provide a 120V, 15A, dedicated circuit to the remote metering cabinet for Festival Hydro's use.

13. The Customer shall be responsible for the installation and termination of all service conductors within the instrument transformer cabinet in the presence of Festival Hydro or its Contractor.

14. The remote metering cabinet and instrument transformer cabinet shall be dedicated to Festival Hydro's metering equipment. No Customer owned equipment or devices shall be permitted to be installed inside these cabinets.

15. Festival Hydro shall review and approve the Customer's electrical room/metering layout for compliance with Festival Hydro's metering specifications.

10.0 Three Phase, 600V Installations, >400A

1. All Customer equipment shall be CSA approved and all installations must comply with the with the latest version of Festival Hydro's Conditions of Service and the Ontario Electrical Safety Code.

2. A permanent, legible, up-to-date single-line diagram of the Customer's electrical service, clearly identifying all potential sources, back-feeds, isolation points, and the connections for the service shall be provided in a conspicuous location within sight of the main service disconnect as well as the instrument transformer compartment.

3. The instrument transformers (ITs) shall be installed in the Customer's switchgear in an instrument transformer compartment with a minimum depth of 12" for services <=1000A and 16" for services >1000A, downstream of the main service disconnect, and installed by the switchgear manufacturer or an approved electrical contractor.

4. The instrument transformer compartment shall only be accessible through a pad-lockable access door.

5. The Customer shall bring a full-size neutral service conductor to the IT cabinet for the metering potential connections even if it is not utilized by the Customer's loads.

6. The Customer shall provide a 24" x 16" x 10" remote metering cabinet (Hydel Catalogue #74820585 or equivalent) with removable backplate for the meter.

7. The remote metering cabinet shall be installed on an outside facing, interior wall or on the exterior of the building.

8. The remote metering cabinet shall be installed with the top of the cabinet being no less than 600mm and no more than 1900mm from the ground.

9. The Customer's switchgear and remote metering cabinet shall be installed with a working space of 500mm on both sides as measured from the center of the IT compartment and remote metering cabinet.

10. The remote metering cabinet shall be connected to the instrument transformer compartment via a minimum 1 ¼" conduit, no more than 50' in length, and without the use of pulling elbows.

11. The Customer shall provide a 120V, 15A, dedicated circuit to the remote metering cabinet for Festival Hydro's use.

12. The remote metering cabinet and instrument transformer cabinet shall be dedicated to Festival Hydro's metering equipment. No Customer owned equipment or devices shall be permitted to be installed inside these cabinets.

13. Festival Hydro shall review and approve the Customer's electrical room/metering layout and switchgear shop drawings for compliance with Festival Hydro's metering specifications and instrument transformers.

11.0 Manufactured Meter Load Centres

a. Side-hinged doors or panels shall be installed over all sections of the switchboard where Festival Hydro may be required to work, such as unmetered sections and those sections containing breakers, switches, and meter mounting devices. Hinged doors of panels shall have provision for sealing in the closed position. Where bolts are used, they shall be of the captive knurled type. The hinged covers over breakers or switches shall be so constructed that the covers cannot be opened when sealed or padlocked,

b. Breakers or switch handles shall have provision for positive sealing and padlocking in the “off” position.

c. Meter mounting devices shall be wired so as to be on the “load” side of the breakers or switches.

d. Each combination meter socket and breaker panel shall be fashioned with a permanent Customer identification label with respect to street address and/or unit number.

e. The Manufactured Meter Load Centre shall be installed indoors.

f. The center of the bottom row of meter sockets shall be not less than 610mm from the finished floor. The center of the top row of meter sockets shall be not more than 1680mm from the finished floor.

g. The load centre shall be installed with a working space of 500mm on both sides as measured from the center of the left- and right-most meter sockets.

h. The meter mounting socket and sealing ring shall be acceptable to Festival Hydro.

i. 208V meter-mounting devices shall have a pre-wired ungrounded neutral connection to the 5th jaw. The connection, if not bussed directly to the neutral, shall be not less than #12 AWG copper or equivalent.

j. The Customer shall submit shop drawings of the Manufactured Meter Load Centre to Festival Hydro for review and approval.

12.0 Fire Pump Services

If a fire pump fed from separate service or a tap connection ahead of the main service disconnect is required in order for the Customer's facility to comply with legislation, codes, or regulations, Festival Hydro will offer it subject to the following additional requirements:

a. A single line diagram indicating all potential sources, back-feeds, isolation points, and the connections for the main and fire pump services as well as the service voltage and current ratings shall be submitted to Festival Hydro for review and approval.

b. The disconnect and meter base/instrument transformer cabinet for the fire pump service shall be located in the same room as the main service disconnect with the fire pump meter being within 1000mm of the fire pump disconnect.

c. Laminated engraving warning placards (Lamicoids) must be permanently affixed at both the fire pump service disconnect and at the main service disconnect. Placards must be red with white lettering and the lettering must be a minimum of 12.7mm (0.5") in size. Wording on these cards must be "FIRE PUMP INSTALLED AHEAD OF MAIN SERVICE DISCONNECT. MULTIPLE POINTS OF SUPPLY EXIST IN THIS ROOM. THERE IS A POSSIBILITY OF ELECTRICAL BACK FEED."

d. A permanent, legible, up-to-date single-line diagram of the Customer's electrical service, clearly identifying all potential sources, back-feeds, isolation points, and the connections for the main and fire pump services shall be provided in a conspicuous location within sight of the main service and fire pump disconnects as well as all instrument transformer cabinets/compartments and self-contained meter bases.

13.0 Multiple Meter Installation Meter Base Labels

Facilities with two or more electricity meters must have the meters labelled to properly identify the unit in which they supply power to. It is the responsibility of the customer to ensure that all meters are labelled as per the following:

a. For stand-alone and ganged meter bases without individual disconnects, a label indicating the unit number must be attached to a permanent section of the meter cubicle or meter base. It is preferred that this label be placed on the top portion of the cubicle/base above the meter.

b. For stand alone meter bases that have individual disconnects, a label indicating the unit number must be attached to a permanent section of both the meter base and its corresponding service disconnect. If the service disconnect is located directly adjacent to the meter base, and in a way in which it is easy to determine the disconnect corresponding to each individual base, the label indicating the unit number can be attached to a permanent section of the disconnect only.

c. For services utilizing instrument transformer cabinets, the cabinet and corresponding service disconnect shall both bare identical labels indicating the unit number. If the service disconnects are located directly adjacent to their corresponding instrument transformer cabinets, and in a way in which it is easy to determine the disconnect corresponding to each individual cabinet, the label indicating the unit number can be attached to a permanent section of the disconnect only.

d. For services utilizing switchgear instrument transformer compartments, the compartment and corresponding service disconnect shall both bare identical labels indicating the unit number.

e. For services utilizing a remote metering cabinet, the remote metering cabinet shall bare the same label indicating the unit number as its corresponding instrument transformer cabinet/compartment and/or service disconnect.

f. The label must identify all units supplied by an individual meter in the case of multiple units utilizing a single meter.

g. The door frame of each specific unit must be affix with a label of identical description to that of the corresponding meter.

h. The main façade of each unit shall not have any additional numbering that may contradict the door frame label.

i. The main service equipment of each unit must be affixed with a label indicating the unit number.

j. All labels as required by Festival Hydro shall not include the Customer/Tenant names.

k. All labels shall be laminated engraving warning placards (Lamicoids) with a minimum height of 12mm using a font that can be easily read with all numbering using the decimal (base 10) system.

l. For labels located indoors, vinyl labelling with a minimum heigh of 12mm are an acceptable alternative.

m. Labels shall be black with white font, or white with back font. Labels for emergency services such as a fire pumps or backup generators can be red with white or black font as an acceptable alternative.

n. Customers modifying an existing multiple meter installation including adding, splitting,

or merging units must ensure that all meters and units are labelled accordingly.

o. The Customer must bring an existing installation up the current labelling standards at the request of Festival Hydro if it is determined that the existing labelling is insufficient to easily identify a meter to its corresponding unit(s).

14.0 Customer Access to Real Time Meter Data

Interval metered Customers with a three phase, transformer type metering installation may request access to the real time data of their meter through either of the two options:

1. KYZ Contacts

    a. Festival has a limited inventory of legacy KYZ equipped meters.

    b. If stock is available, the Customer may request that their meter be exchanged with a KYZ equipped meter.

    c. Festival Hydro will not maintain their KYZ equipped meter inventory beyond the existing stock and as these meters are removed from service due to failures or obsolescence, they will not be repaired or replaced.

    d. Connections to the Customer's cabling shall be made in a junction box installed on the side of the meter cabinet installed by Festival Hydro.

    e. The Customer shall be responsible for the cables from the junction box to the Customer's end device.

    f. Festival Hydro to provide the KYZ multipliers to the Customer.

    g. The Customer shall bear all of Festival Hydro's costs related to the upgraded KYZ capable metering installation.

    h. A contract may be required between the Customer and Festival Hydro for the use of the KYZ contacts, to be determined at the discretion of Festival Hydro.

2. DNP3 via RS-232 Communications

    a. At the Customer's request, Festival Hydro will exchange their meter for a meter capable of DNP3 communications over RS-232.

    b. Connections to the Customer's cabling shall be made in a junction box installed on the side of the meter cabinet installed by Festival Hydro.

    c. The Customer shall be responsible for the cables from the junction box to the Customer's end device.

    d. Festival Hydro to provide the DNP mapping, scaling, and communication settings to the Customer.

    e. The Customer shall bear all of Festival Hydro's costs related to the upgraded DNP3 capable metering installation.

    f. A contract may be required between the Customer and Festival Hydro for the use of the DNP3 communications, to be determined at the discretion of Festival Hydro.

15.0 Ownership

For Customer metering installations, Festival Hydro shall maintain the ownership and responsibility of the:

a. Meter.
b. Meter base adapter.
c. Test block.
d. Instrument transformers.
e. Instrument transformer tap and secondary conductors.
f. Low voltage insulation piercing connectors for metering potential circuits.
g. Remote metering cabinet (services >600V).
h. Instrument transformer switchgear (services >600V).
i. Pad-mount, metering switchgear foundation (services >600V)
j. Remote metering cabinet receptacle.
k. Communication equipment used for the purpose of meter reading/billing.

The Customer shall maintain the ownership and responsibility of the:

a. Meter bases.
b. Service conductors and terminations.
c. Service power equipment, meter load centres, and switchgear.
d. Instrument transformer cabinet.
e. Remote metering cabinet (208V and 600V services)
f. 120V, 15A remote metering cabinet supply circuit.
g. Working space and clear egress path around all metering equipment.