CHAPTER 1

ELECTRIC SERVICE RULES – GENERAL INFORMATION

100. GENERAL

The use of the name Alliant Energy in this Electric Service Rules refers to the electric utility operations for Interstate Power and Light (IP&L) and Wisconsin Power & Light (WP&L) in the states of Iowa, Minnesota, and Wisconsin.

101. PURPOSE

A. The purpose of this Electric Service Rules is to supply essential information to Customers, employees, architects, engineers, contractors, inspectors, and others concerned with the planning and construction of electric service installations in Alliant Energy's Interstate Power and Light and Wisconsin Power and Light service areas. Alliant Energy's objective is to cooperate and assist Customers to obtain safe and efficient electric service.

B. Information in this Electric Service Rules is intended to cover typical installations. Alliant Energy shall be consulted when special consideration is required.

C. Before and during the planning stages for electric service, especially larger projects, customers, their contractors, architects, and engineers should contact Alliant Energy at (1-800 - Alliant) to avoid misunderstanding and unnecessary expenses. Alliant Energy will assist in the planning and scheduling, and explain all applicable Rates and Rules. Early notification will prevent unnecessary delays and expense.

D. All information provided in this Electric Service Rule Book is used in conjunction with Alliant Energy's Tariffs on file with the Iowa Utility Board, the Wisconsin Public Service Commission, and the State of Minnesota Public Utilities Commission.

This edition of the Electric Service Rules supersedes all previous editions.
△ **Rule changes and revisions are noted with "Δ" symbol on the left of pages.**

102. SCOPE

The scope of this Electric Service Rules is to provide information to assist in the design and construction of electric service installations. Information is provided to address the responsibilities for ownership, installation and maintenance of service equipment to accommodate installation of utility owned overhead service drops, underground service laterals and the installation of Customer termination and metering facilities.

Information and requirements relating to sketches or other information contained herein are intended to aid contractors with the design, planning and installation of service facilities for their customers.

103. WORD APPLICATION

A. **"Shall"** denotes a rule or mandatory requirement which shall be followed.

B. **"Should"** recommends a desirable practice for a specific condition.

C. **"May"** indicates a possible option.

104. CONTINUITY OF SERVICE

A. Alliant Energy's goal is to provide continuous electric service, restore service promptly, and maintain its facilities with minimal inconvenience to Customers. Alliant Energy does not guarantee continuous service, standard voltage, or frequency at all times.

B. Customers operating equipment that is sensitive or requires a higher quality of service may find it necessary to install, at their own expense, power-conditioning equipment to protect, mitigate, or otherwise provide the extraordinary standard of service needed by their load.

105. POINT OF SERVICE

The energy supplied by Alliant Energy changes ownership at the point of service. This is the location where the Customers wiring starts and Alliant Energy's ends. The overhead point of service is where Alliant Energy attaches its service drop to the building or structure. Alliant Energy provides the attachment device, if requested, at the Customer's building or structure in Wisconsin. In Iowa and Minnesota the Customer provides and installs the insulated attachment device. The underground point of service is either at the metering point (self contained meter or CT cabinet) or the termination box.

106. CODES AND RULES

Alliant Energy requires that all customer wiring installations meet the minimum requirements of the *National Electrical Code, National Electrical Safety Code*, *National Fuel and Gas Code (NFPA 54), Liquefied Petroleum Gas Code (NFPA 58), DOT Regulations,* and/or state and local codes when their requirements are more restrictive.

A. Alliant Energy reserves the right to refuse to extend service where a Customer's installation does not comply with these provisions and requirements as stated. In case of service refusal, Alliant Energy shall inform the Customer of the reason for refusal to render service within one business day.

B. Alliant Energy shall de-energize any service when that service is found to be in an unsafe condition.

C. **COMPLIANCE**
Alliant Energy reserves the right to refuse to extend service where a Customer's installation does not comply with all the requirements of the Electric Service Rule Book.

107. APPLICATION FOR SERVICE

Applications for a **new service** and /or **changes to an existing service** shall be in writing and made well in advance of the date service is required. This will permit Alliant Energy to plan and schedule its work to provide service by the date required. See the following:

A. Application forms: The proper application for service must be submitted when applying for service

B. Service Location:

1. The Customer shall contact Alliant Energy engineering for assistance and approval when determining the service location on the building or where the structure supporting the service will be located.
2. The Customer shall at this time provide Alliant Energy with all load information and the proposed service entrance size and voltage requirements.

C. Charges

After a review of the site and Alliant Energy facilities in the area, Alliant Energy will notify the customer if additional charges are required to cover the cost for the service.

D. Easements:

1. The Customer shall provide Alliant Energy a recorded copy of the Certified Survey or Plat plan of the property where the service will be required.
2. The Customer shall provide Government forms indicating the location of any existing or proposed septic systems.
3. The Customer shall provide easements for service and/or distribution facilities where required.

E. Line Clearance:

The Customer shall be responsible for clearing any trees or brush which might inhibit the service installation of Alliant Energy facilities.

F. Wiring Inspections:

1. Customers wiring installations shall meet the minimum requirements set forth by the State Regulatory Commissions and any local authority having jurisdiction. Alliant Energy shall receive a written approval form from the **Authority Having Jurisdiction**.
2. Where no inspection authority exists, Alliant Energy shall receive a signed copy of the Wiring Statement – Certificate of Electrical Inspection before energizing any new or rewired Electrical service.
3. Alliant Energy reserves the right to inspect for compliance with this ESR Book, but assumes no responsibility for inspection of the customer's installation

For additional information contact Alliant Energy engineering personnel at our local office. Call 1-800-Alliant.

108. SERVICE VOLTAGES AND MAXIMUM AMPERAGE (600 V. OR LESS)

Standard (600 Volt or less) service voltages provided by Alliant Energy are listed below. (Not every voltage is available at every location). **For service voltages greater than 600 Volts see Chapter 10.**

MAXIMUM SERVICE ENTRANCE AMPERAGE			
TRANSFORMER	**POLE-MOUNT**	**POLE-MOUNT**	**PAD-MOUNT**
SERVICE	**OH**	**UG**	**UG**
120/240V- 1 Phase	600[2, 8]	400[4, 8]	600[2, 8]
120/208V-1 Phase	200[1]	200[1]	200[1]
120/208V-3 Phase	1200[3, 5]	400[4]	3000[3, 6]
277/480V-3 Phase	200[7]/600[2]	200[7]/400[4]	200[7]/3000[3, 6]

SUPERSCRIPTS:

1. Available only from an existing 120/208 Volt 4 – wire system, maximum 200 Ampere network meter.
2. 600 Amp Continuous Duty service or 800 Amp Intermittent Duty Service, limited by loading on 167 kVA transformer.
3. Continuous Duty Service
   Service entrance equipment listed as "Continuous Duty" may be operated at its full load for 3 hours or more. Those listed as "Intermittent Duty" may only be operated at 80% of its full load for long periods, and 100 % of full load for short periods, depending upon its design.
4. Limited by capacity of maximum of parallel 350 MCM AL risers, the ampacity is limited to 400 Amps by the cable riser capacity.
5. Limited by loading on 3 - 167 kVA transformers.
6. Limited by loading on the largest available Pad-Mounted Transformer for the service voltage being utilized"...
7. Requires disconnect ahead of the meter-socket that has a maximum SCCR of 10,000. In order to limit the SCCR, limited to maximum loading on 3 – 50 kVA transformers. Applies to self contained 480 volt installations
8. In areas near livestock, may be limited to 300 amps, contact Alliant Energy Engineering.

NOTES:

1. All services are intermittent duty unless stated otherwise.
2. All services have grounded neutral conductor.

109. NUMBER OF SERVICES

Alliant Energy provides each parcel of land or property with only one service (refer to Section 108 for service sizes) supplied by one overhead service drop or underground service lateral to a building, or structure located on a non-contiguous parcel of land or property. Ref. NEC 230.2.
Additional services may be permitted with approval from Alliant Energy engineering and if the following exception requirements have been met.

A. PRIMARY SERVICE

1. When a property is served at a primary distribution, or transmission voltage the single service to the parcel of land rule applies. A second service at a transformed secondary voltage is not allowed with the exception of a fire pump service as indicated in paragraph (2) of this section. If buildings or structures, or both, on a parcel of land have service at both primary and secondary voltages; this may have been allowed in the past, we now will require service upgrades to meet present NEC and Electric Service Rule requirements.
2. **Primary Service Exception (For Existing Primary Service Customers ONLY)**
   A separate secondary voltage service may be provided for supplying fire pumps, or emergency systems, when the general service is at primary voltage. Fire pump or emergency services are treated as standby service/duplicate facilities according to Alliant Energy's extension rules.
3. **Backup Service**
   A backup service is allowed as a separate service to the customer's property, but may only be utilized when the primary feed (service) is not available. Both primary and backup services shall share common metering. The backup service shall have an open switch at the perimeter of the customer's property, separating this service feed from the main service feed to the customer's load. When the Customer's main feed is interrupted, the open switch for the backup service will be closed to pick up the customer's load.

B. SECONDARY SERVICE

1. **Definitions**
   a. **"Building"** is defined, "a structure which stands alone or which is separated from adjoining structures by fire walls. Check with local building inspector when there are questions as to whether the building in question is a single building or classified as more than one building The local AHJ will make the final determination as to the building classification

   "**Structure**" other than a building is defined as a substation, pole, pedestal, vault, pad-mounted switchgear, communication tower, or other structure specifically approved by Alliant Energy.

b. **"Row-house"** "is defined as three or more contiguous living units, not more than 3 stories high, separated by firewalls having a minimum 1-hour fire resistive rated construction which extends from the foundation to the underside of the roof deck with no doors or windows in the firewall."

2. **EXCEPTIONS**

Alliant Energy engineering shall specifically approve any exceptions for multiple services.

2008 NEC 230.2, Where a building or structure is supplied by more than one service, or any combination of branch circuits, feeders, and services, a permanent plaque or directory shall be installed at each service disconnect location denoting all other services, feeders, and branch circuits supplying that building or structure and the area served by each.

2008 NEC 250.58, Where separate services, feeders, or branch circuits supply a building and are required to be connected to a grounding electrode(s), the same grounding electrode(s) shall be used.

a. **Distance Exceptions:**

1). **Buildings**

For buildings of large area, a second building or remote structure, a second service may be provided at any available secondary voltage. The new service shall be located 150 ft. from the existing 120/240 Volt service, or 120/208 Volt 3-phase service. If either the existing or the new service is 277/480 volt, 3-phase, a 300 ft. separation shall be maintained. Each of the above distances is measured in a straight line. All electrical wiring supplied for each service shall have no common raceway or connection with any other service. The creation of a second building (by definition) with the construction of a three hour fire wall does not do away with these distance requirements.

2). **Structures**

Services may be installed on multiple structures provided that they are no closer than 300 ft. apart, (measured in a straight line) and provided that all electrical wiring supplied by each service has no common raceway or connection with any other service.

b. **Multiple Occupancy Buildings Exception (NEC 230.2.b.)**

A separate service may be provided for each multiple metered building. Multi-metered buildings may have a second service provided the distance separation requirements are met.

c. **Load Exceptions**

1). **Single-Phase Service**

An existing single-phase Customer whose, 120/240 Volt load requirements exceed the ability of a 167 kVA transformer to serve the load shall convert to a

three-phase service. The new service shall be a 120/208 or a 277/480 Volt, three-phase, four-wire service. **This new service shall be sized to handle all existing and future loads of the combined services to facilitate prompt retirement of the 120/240 Volt single-phase service. If it is not feasible to retire the single-phase service when the three-phase service is energized, the customer may, with written permission from Alliant Energy Engineering, have up to 6 months to complete the transfer of all loads to the new service. At the end of the agreed upon transition time, the single-phase service will be removed.** If the single-phase service is temporarily left energized to facilitate load transfer, the new service entrance shall be located adjacent to the first service entrance to facilitate the use of the same grounding electrode system by both services as required by the NEC.

2). **Three-Phase Service**
If the total demand of an existing service plus the estimated demand of a proposed expansion is greater than 430 KW at 120/208 Volts or 1 MW at 277/480 Volts, an additional service may be provided adjacent to the first service entrance. When multiple services are installed, they shall be of the same voltage.

3). **120/240 Volt Delta Service**
When the demand of an existing three-phase 120/240 Volt Delta, four-wire customer exceeds the rated capacity of the Customer's existing service entrance, the Customer shall convert to a 120/208 or a 277/480 Volt three-phase, four-wire service. **This new service shall be sized to handle all existing and future loads of the combined services to facilitate prompt retirement of the 120/240 Volt delta service. If it is not feasible to retire the delta service when the new service is energized, the customer may, with written permission from Alliant Energy Engineering, have up to 6 months to complete the transfer of all loads to the new service. At the end of the agreed upon transition time, the delta service will be removed.** If the delta service is temporarily left energized to facilitate load transfer, the new service entrance shall be located adjacent to the first service entrance to facilitate the use of the same grounding electrode system by both services as required by the NEC.

d. Isolated Building Exception
For another building, an additional service may be provided, where there are no continuous metallic paths bonded to the grounding system in both buildings. Services provided by this exception are treated according to Alliant Energy's extension rules.

e. Special Conditions Exception
The preferred way to service loads listed in NEC 230.2(A) Special Conditions is by

connecting to the supply side of the service disconnect as allowed in NEC 230.82. The Customer's special service will then be served along with the main service from a single common drop or lateral.

As an alternative, a customer may also have a separate service drop or lateral, and meter. These services are treated as standby services /duplicate facilities according to Alliant Energy's extension rules.

1). Fire Pumps
2). Emergency systems
3). Legally required standby systems
4). Optional standby systems
5). Parallel power production systems
6). Systems designed for connection to multiple sources of supply for the purpose of enhanced reliability

f. Special Occupancies Exceptions

For row-house construction a separate drop or lateral may be provided for each two attached units. (Buildings must comply with the unique building codes specifically intended for row-houses only). This does not apply for condominiums. See item (B-1) above in this section (distance requirement) for condominium projects exceptions.

g. <u>Zero Lot line Buildings</u>

1. Buildings separated by a common wall;

a. If it's one building; then one service lateral with a multi-meter socket
b. If the buildings have a fire wall(s)(1) as allowed by the local Authority Having Jurisdiction (AHJ), then each building may have a separate service.

Fire barriers shall extend from the top of the floor/ceiling assembly below to **THE UNDERSIDE OF THE ROOF SLAB OR DECK ABOVE,** (IBC Chapter 7), no HVAC vents or other piping between the units through the firewall, and no metallic paths may bond the two units together.

(1) A Guide to Typical Firewall Ratings – AHJ has final say on this matter..
a. 1-Hour - 2-(1/4) inch sheets of sheet rock separated by a 2x4 stud
b. 2-Hour - 2-(3/4) inch sheets of sheet rock separated by a 2x4 stud
c. 3-Hour - 4-(5/8) inch sheets of sheet rock separated by 2-sets of 2x4 studs creating double walls.
d. 4 Hour or greater - 8-inch cinder blocks walls.

110. SHORT CIRCUIT DUTY REQUIREMENTS

The customer's service equipment and other devices shall be adequate to withstand and interrupt the maximum available short circuit current (Fault Current). Consult Alliant Energy for the available short circuit duty when requesting the location for service entrance facilities.

Definitions:

1. Short Circuit Current Requirements (SCCR) – The prospective symmetrical fault current at a nominal voltage to which an apparatus or system is able to be connected without sustaining damage exceeding defined acceptance criteria (NEC – 100)
2. Fault Current – is an abnormal current in an electrical circuit due to a fault (usually a short circuit or abnormally low impedance path) Fault Current comes in three varieties; phase to neutral fault, phase to phase fault, and phase to earth fault
3. Ampere Interrupting Capacity (AIC) – This applies to circuit breakers and their ability to open and protect a circuit with a specific amount of current flowing in the circuit. Ratings from 5000 to 200,000 amps.

A. RESIDENTIAL SERVICE EQUIPMENT MINIMUM SHORT CIRCUIT CURRENT RATINGS

120/240 VOLT, SINGLE-PHASE & 120/208 VOLT, SINGLE/THREE-PHASE	
TOTAL AMPERAGE RATING OF ALL SERVICE ENTRANCE EQUIPMENT ON AN OVERHEAD SERVICE DROP OR UNDERGROUND SERVICE LATERAL [1]	MINIMUM SHORT CIRCUIT CURRENT RATING FOR SERVICE EQUIPMENT ON SPECIFIC SERVICE [2] (AMPS)
60-150	10,000
151-400	22,000
401-1000	42,000
1001-3000	65,000

NOTES:

1. Total amperage ratings of all present and future service entrance equipment connected to the same overhead service drop or underground service lateral.
2. A single family house with a service drop or lateral 25 feet or greater in length may use 200 ampere equipment with a 10,000 ampere interrupting rating.
3. Consult with Alliant Energy engineering for assistance for any special application.

B. COMMERCIAL AND AGRICULTURAL SERVICE EQUIPMENT MINIMUM SHORT CIRCUIT CURRENT RATINGS

120/240 VOLT, SINGLE-PHASE	
TOTAL AMPERAGE RATING OF ALL SERVICE ENTRANCE EQUIPMENT CONNECTED TO THE TRANSFORMER [1]	MINIMUM SHORT CIRCUIT CURRENT RATING FOR SERVICE EQUIPMENT [2] (AMPS)
60-150	10,000
151-400	22,000
401-800	42,000
120/208 VOLT, THREE-PHASE	
TOTAL AMPERAGE RATING OF ALL SERVICE ENTRANCE EQUIPMENT CONNECTED TO THE TRANSFORMER [1]	MINIMUM SHORT CIRCUIT CURRENT RATING FOR SERVICE EQUIPMENT [2] (AMPS)
60-400	22,000
401-800	42,000
801-3000	65,000
277/480 VOLT, THREE-PHASE	
TOTAL AMPERAGE RATING OF ALL SERVICE ENTRANCE EQUIPMENT CONNECTED TO THE TRANSFORMER [1]	MINIMUM SHORT CIRCUIT CURRENT RATING FOR SERVICE EQUIPMENT [2] (AMPS)
60-200	10,000[3]
201-400	25,000
401-1600	35,000
1601-3000	65,000

NOTES:

1. Total amperage ratings of all present and future service entrance equipment connected to the same distribution transformer.
2. Minimum fault current equipment requirements do not apply to CYP pole top switches.
3. Self-contained meter service applications are limited to a single service and have a maximum transformer size of 150 kVA.
4. Consult Alliant Energy engineering for assistance with any special applications such as oversized transformers for high harmonic loads and other applications not covered by these tables.

△ 110C. SHORT CIRCUIT ANALYSIS

kVA	Primary Voltage	Secondary Voltage	Design % Iz @ 85ºC	Full Load Secondary Current (A) L-L	Transformer Multiplier	Transformer Secondary Fault Current (A) L-L
Single-Phase, Pole-Mount Transformers						
25	13200 GY / 7620 Z-Tap	120/240	2.21	104	45.25	4,713
50	13200 GY / 7620 Z-Tap	120/240	1.97	208	50.76	10,575
100	13200 GY / 7620 Z-Tap	120/240	2.03	417	49.26	20,525
167	13200 GY / 7620 Z-Tap	120/240	2.22	696	45.05	31,344
Single-Phase, Pad-Mount Transformers						
25	13200 GY / 7620 Z-Tap	240/120	2.11	104	47.39	4,937
50	13200 GY / 7620 Z-Tap	240/120	2.11	208	47.39	9,874
100	13200 GY / 7620 Z-Tap	240/120	2.24	417	44.64	18,601
167	13200 GY / 7620 Z-Tap	240/120	2.24	696	44.64	31,064
Three-Phase, Pad-Mount Transformers						
75	13200 GY / 7620 Z-Tap	208Y/120	3.77	208	26.53	5,522
150	13200 GY / 7620 Z-Tap	208Y/120	4.09	416	24.45	10,180
300	13200 GY / 7620 Z-Tap	208Y/120	4.13	833	24.21	20,163
500	13200 GY / 7620 Z-Tap	208Y/120	3.58	1388	27.93	38,768
750	13200 GY / 7620 Z-Tap	208Y/120	5.77	2082	17.33	36,081
1000	13200 GY / 7620 Z-Tap	208Y/120	5.75	2776	17.39	48,275
75	13200 GY / 7620 Z-Tap	480Y/277	3.51	90	28.49	2,570
150	13200 GY / 7620 Z-Tap	480Y/277	4.14	180	24.15	4,358
300	13200 GY / 7620 Z-Tap	480Y/277	3.99	361	25.06	9,044
500	13200 GY / 7620 Z-Tap	480Y/277	3.90	601	25.64	15,421
750	13200 GY / 7620 Z-Tap	480Y/277	5.76	902	17.36	15,662
1000	13200 GY / 7620 Z-Tap	480Y/277	5.74	1203	17.42	20,956
1500	13200 GY / 7620 Z-Tap	480Y/277	5.74	1804	17.42	31,433
2000	13200 GY / 7620 Z-Tap	480Y/277	5.74	2406	17.42	41,911
2500	13200 GY / 7620 Z-Tap	480Y/277	5.74	3007	17.42	52,389

NOTES:

1. Alliant Energy strongly recommends using the next larger available transformer kVA size.
2. This method assumes unlimited primary short-circuit current (infinite bus).
3. The impedance listed is the nominal value for the transformers under the 2009 purchase agreement.
4. Transformer impedance can vary significanly by manufacturer and by year.
5. This table uses Standard transformer sizes for Alliant Energy.

111. INSPECTIONS AND MAINTENANCE

In areas where electrical inspectors are provided, the inspector is the Authority Having Jurisdiction (AHJ) on all issues dealing with Customer owned electrical wiring facilities.

112. SERVICE CONNECTIONS

Alliant Energy will make all service connections to its electric distribution system. Connection to or alteration of Alliant Energy's electric service facilities or other equipment is prohibited and is subject to immediate disconnection.

113. IDENTIFICATION OF CONDUCTORS

A. The neutral or grounded conductor of a service entrance (480 V and under) shall be identified by a white or gray color/ tape, or by three continuous white stripes on other than green insulation along its entire length.

B. On 4-wire, delta connected secondary, where the midpoint of one phase winding is grounded to supply lighting and similar loads, the phase conductor having the higher voltage to ground shall be identified by an outer finish that is orange in color, by tagging, or other effective means. Such identification shall be placed at each location where a connection is made if the grounded conductor is also present.

114. CAPACITY

A. Service entrances shall have ample capacity, per The *National Electrical Code*, *see NEC Article 220,* for any electrical load that may reasonably be expected to develop. All current carrying components of the metering installation shall have an ampacity rating equal to or greater than the required ampacity rating of the service entrance conductors.

B. The Customer shall give Alliant Energy reasonable notice of substantial load increases (permanent or temporary) which may require Alliant Energy to increase the capacity of its facilities. Customers who fail to notify Alliant Energy will be charged for the replacement cost of damaged Alliant Energy equipment.

C. For Customer installations of two to six breakers, or sets of fuses, on the load side of a termination box, or current transformer cabinet, the sum of the ratings of the circuit breakers, or fuses shall be permitted to exceed the rating of the termination box or instrument transformer cabinet **provided the load is calculated** in accordance with NEC Article 220. That load shall not exceed the ampacity rating of the termination box or current transformer cabinet. The NEC article 220 load calculations shall be provided in writing to Alliant Energy.

D. The rating of the service disconnect is to be not less than the calculated load to be carried and not the actual load carried. (NEC 230.79)

E. The combined service or current protection rating shall not exceed the ampacity rating of the self-contained meter socket. Self contained metering is limited to 300 amps capacity. Adjustable breakers, whose maximum rating either individually or in combination, exceeds the rating of the self-contained meter are prohibited.

F. Meter disconnect switches nominally rated not in excess of 600 volts shall have a short circuit rating equal to or greater than the available short circuit current. These devices shall also be grounded and bonded according to parts V & VII of Article 250. (NEC 230.82)

115. CHANGES TO CUSTOMER'S EXISTING SERVICE-ENTRANCE EQUIPMENT

A. When the Customer is changing the ampacity of their service disconnect(s), they must meet the current version of the NEC and the ESR Book.

B. When the customer modifies their service in any way that requires them to adhere to the current NEC they must also adhere to the current ESR Book.

116. ALLIANT ENERGY EQUIPMENT ON CUSTOMER PREMISES

A. Customers shall grant Alliant Energy the right to install its equipment on the Customer's premises to supply service. All such equipment shall remain Alliant Energy property and may be removed when service is no longer required.

B. Alliant Energy shall have the right of access to its equipment located on Customer premises for inspection, maintenance, restoration and removal of service. The Customer shall provide without cost to Alliant Energy the necessary easements and/or right-of-way for Alliant Energy personnel to install, maintain, and access to electric facilities on the Customers property, that provide electric service to the Customer. This will include permission to trim and/or remove trees and brush that may interfere with the installation and operation of Alliant Energy's facilities.

C. Customers are expected to take reasonable care of Alliant Energy equipment located on their property. Customers will be responsible for all damages to or loss of Alliant Energy property located on their premise, unless damage is by causes beyond their control. The Customer shall not grant authority to anyone who is not an employee of Alliant Energy to open or operate Alliant Energy equipment.

D. Alliant Energy will attempt to give advance notice when accessing Alliant Energy facilities on the Customer's property, but may not be able to do so during emergencies.

117. SEQUENCE OF DISCONNECTING SERVICE AND METER

The location of the service disconnect, unless specifically approved by Alliant Energy, shall be on the load side of the metering (**meter-switch-fuse)** sequence.

Exception #1

In multiple meter locations where the *National Electric Code* requires a main disconnect, the sequence shall be **Main Service Disconnect** - **Meter-Switch-Fuse.**

Exception #2

For all 480Y/277 Volt services with self contained meters the sequence shall be **Switch - Meter- Switch - Fuse.**

Exception #3

Switch – Meter – Switch - Fuse is the sequence in the Cedar Rapids downtown network system.

118. CUSTOMER INSTALLATION

A. The Customer installs, owns and maintains the service entrance equipment, and provides a secure location for holding service wires and service entrance equipment to the building or structure. All service entrances shall include a service disconnecting means, over-current protection and Alliant Energy approved metering equipment located in the vicinity of where electric service is supplied to the building or structure.

B. The National Electrical Code states where the service disconnects may be located. The Wisconsin State Electrical Code and Comm. 16 states where the customer owned service entrance conductors and service disconnects may be located in Wisconsin. The Electric Service Rule Book states where utility owned service conductors shall be located, terminated and metered.

1. The National Electrical Code in Section 230.70(A) limits the location of the service disconnect to a readily accessible location either outside of the building, or inside nearest the point of entrance of the service conductors location.
2. The Wisconsin State Electrical Code in COMM 16.25(4) states that conduits for service conductor located according to NEC 230-70(a) can extend no more than 8 feet into the building from the point they enter the inside of building through the outside wall or concrete floor. (WP&L Only)
3. Alliant Energy's Electric Service Rule Book limits the location and termination of utility owned service conductors to an installation on the outside of the Customer's building or structure.

119. COMMUNICATION TOWER INSTALLATION

A. All communication towers are considered to be structures. Alliant Energy will provide either **one** underground service lateral or **one** overhead service drop to a tower site regardless of the number of tower users.

IPL Exception **ONLY:**
In the event that communication facilities are installed on an existing structure .i.e. (water tower, grain bin, etc.) that is served by a voltage other than that required by the communication user, a second service, at the desired voltage, may be permitted, with approval from Alliant Energy engineering. The second service, at the different voltage, shall be located immediately adjacent to the first service entrance to facilitate the installation of the required bonding conductor between the two main disconnects.

B. The tower owner will be responsible for providing metering and service entrance facilities to serve all tenants utilizing the tower facilities

C. Metering shall be made accessible to Alliant Energy personal. Metering shall be installed in one of the following ways:
1) Locate metering outside of the Customer's secured area.
2) Locate metering inside a common fenced area or a separately fenced area and provide provisions for an Alliant Energy padlock. The metering shall be located 4' to 5' from the edge of the fence to facilitate reading the meters through the fence.

D. When additional Customers request service, Article 220 load calculations are required before the new service(s) will be energized.

E. The normal sequence shall be meter-switch-fuse, if 6 meters or less. If in the future more than six meters will be required, the Customer shall install a service disconnect for a grouped meter assembly of modular design and factory bussed. The sequence would then be switch-fuse-meter-switch-fuse.

F. The tower owner is required to install sufficient meter positions when the first tenant goes on the tower to accommodate all possible tenants. Label each position as Unit #1, Unit #2 etc. Do not use tenant names as tenants may change.

G. Communication towers are considered a commercial account and shall have lever-by pass meter sockets. Each meter shall be placarded where multiple meters are installed.

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