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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

Title Page

CHUGACH ELECTRIC ASSOCIATION, INC.  
ELECTRIC UTILITY  
TARIFF

Tariff No.: 2  
Nature of Services: Electric Utility  
Area Served: Area authorized by Certificate No. 121

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

Tariff Advice No.

Issued by:

Effective: **December 23, 2020**

Chugach Electric Association, Inc.  
P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA No. 1211<sup>st</sup> RevisionSheet No. 2CancelingOriginalSheet No. 2**RECEIVED****NOV 15 2021**STATE OF ALASKA  
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Chugach Electric Association, Inc.

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MAPS

Chugach's certificated service area is delineated on the map located on Tariff Sheet No. 8.

The Chugach service area description contained in the sixth Revision of Certificate of Public Convenience and Necessity, No.121 is as follows:

DESCRIPTION OF SERVICE AREA:

- |      |     |           |   |
|------|-----|-----------|---|
| T13N | R4W | Sections: | 13, that portion of 23 generally east of the centerline of the Alaska right of way, and 24  |
| T13N | R3W | Sections: | Those portions of 6 through 10, and 12 not included within the boundaries of a military reservation; 15 through 22, and 27 through 30 |
| T13N | R2W | Sections: | That portion of 7 not included within the boundaries of a military reservation  |

(All the above with reference to the Seward Meridian)

In addition, the following customer locations are being served within the Elmendorf Air Force Base and Fort Richardson areas:

1. Municipality of Anchorage d/b/a Anchorage Water & Wastewater Utility Ship Creek Dam Waterline, from the Ship Creek Filtration Plant to the Ship Creek Dam
2. 716 Steel Road, State of Alaska Elmendorf Fish Hatchery
3. 2800 Post Road, Elmendorf Air Force Base Guard House
4. 3000 Post Road, Elmendorf Air Force Base Golf Course, SE of EAFB Post Road Gate, Elmendorf Air Force Base Golf Cart Storage Facility
5. 2651 Post Road, State of Alaska d/b/a Alaska Railroad Load Center, 3301 Post Road, State of Alaska d/b/a Alaska Railroad Signal Light
6. 4005 McPhee Avenue, Anchorage School District Mountain View Elementary School

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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7. 5400 Davis Way, Federal Aviation Administration Air Traffic Control Facility  
5400 Davis Way, Federal Aviation Administration Modular Office Buildings
8. East side of Robert Rude Subdivision, AWWU Control Valve Station
9. 525 East Bluff Drive, Anchorage School District Government Hill Elementary School
10. 911-1509 Richardson Vista Drive and 1303-1347 East Bluff Drive, Richardson Vista Apartments (19 building complex)
11. Fort Richardson Bulk Power Sales
12. Elmendorf Air Force Base Bulk Power Sales
13. 9100 Centennial Drive, Cook Inlet Housing Authority Water Pump
14. 8701 Glenn Highway, State of Alaska Glenn Highway Lighting
15. Elmendorf Hospital Central Plant
16. State of Alaska Fort Richardson Fish Hatchery
17. Veterans Affairs Clinic, EAFB

The locations listed above are numbered to correspond with the numbered locations shown on the service area Map on file with the Regulatory Commission of Alaska and on Tariff Sheet No. 8.

**CHRONOLOGY:**

Conditional Temporary Certificate:	12/31/70 (U-70-63 (1))
Original Certificate granted:	07/28/72 (U-70-063 (3)), 08/03/72 (U-70-063 (3E))
First Revision	09/27/73 (U-71-016 (19))
Second Revision	01/07/80 (U-71-016 (22))
Third Revision	08/27/84 (U-71-016 (37))
Fourth Revision	07/18/91 (U-90-006 (2))
Fifth Revision	10/31/91 (U-90-006 (2))
Sixth Revision	12/01/97 (U-97-104 (1))
Seventh Revision	05/21/01 (U-00-79 (7))
Eighth Revision	05/13/08 (U-07-160(2))

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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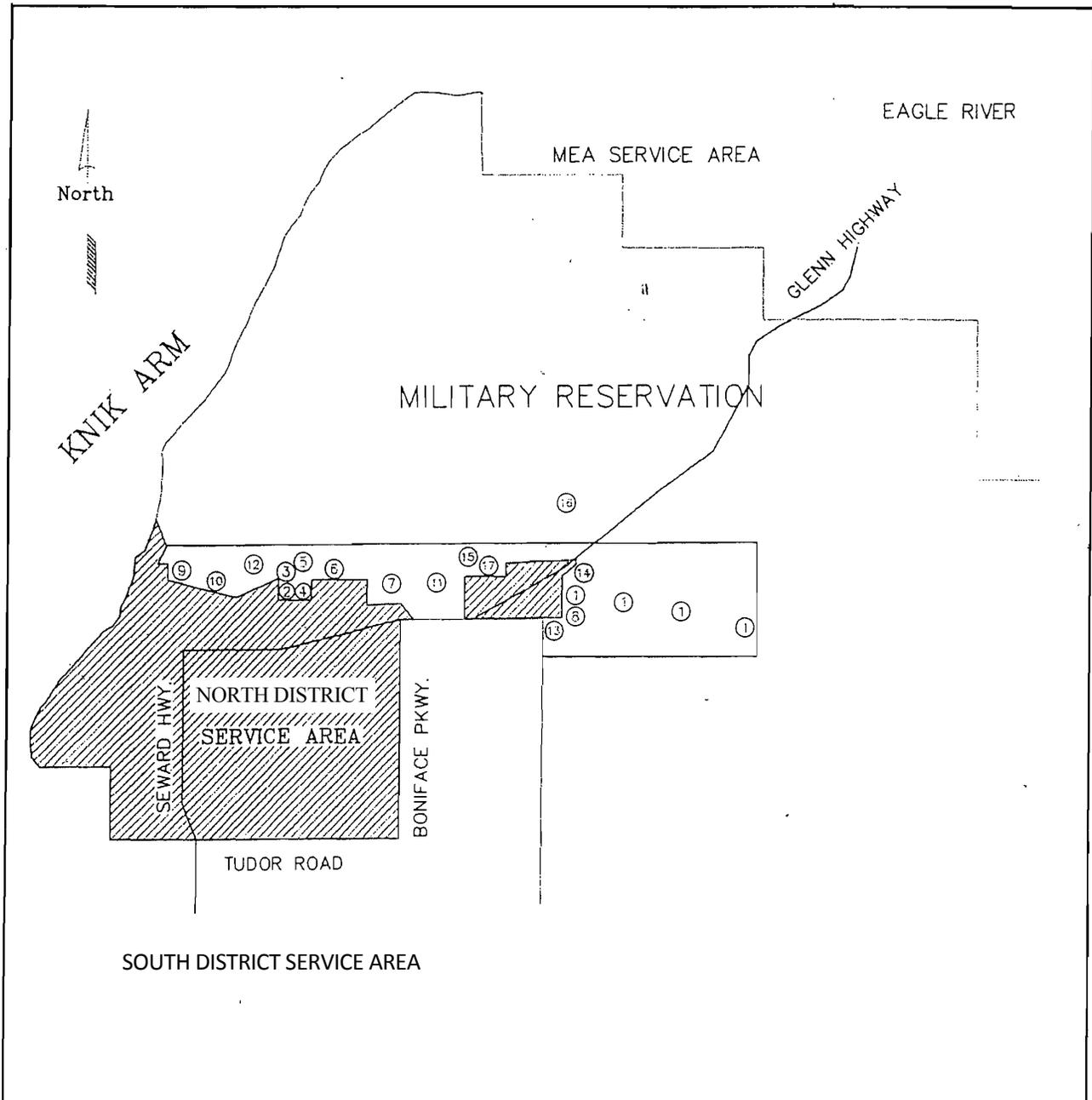
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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**RULES AND REGULATIONS**

**1. AUTHORITY FOR RULES AND REGULATIONS**

**1.1 Adoption**

These rules and regulations have been adopted by the Board of Directors of Chugach Electric Association, Inc. (hereinafter called "Chugach") in accordance with Chugach's Articles of Incorporation and Bylaws and in accordance with the requirements of Federal, State, and other bodies having jurisdiction over Chugach.

No officer, agent, or employee of Chugach has the authority to waive, alter, or amend these rules and regulations.

Copies of the rules and regulations, together with the attached copies of the rate schedules, are available for inspection at Chugach's office at 5601 Electron Drive, Anchorage, Alaska during working hours and on Chugach's website: [www.chugachelectric.com](http://www.chugachelectric.com).

Members may contact Chugach using the contact methods provided in Section 6.12.1 Service Center.

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Chugach Electric Association, Inc.

**2. NATURE OF SERVICES OFFERED**

**2.1 Electric Service**

Chugach provides 60 cycle, alternating current, either single or three phase, at available standard voltages. Voltage, frequency, and wave form are regulated to conform to the standard practices of the industry.

Chugach shall construct, operate, and maintain the facilities necessary to deliver electrical energy to the point of receipt by the member, but Chugach will not be responsible for loss or damage caused by interruptions of service unless caused by Chugach's negligence.

**2.2 Interruptions for Repairs or Modifications**

Chugach reserves the right to temporarily suspend the delivery of electric service when necessary for the purpose of making a repair, modification, or improvement to the system. If not precluded by emergency conditions, Chugach will make a reasonable effort to give notice to the member, either through public media or individual communications. Repairs or improvements will be completed expeditiously and, insofar as it is feasible, the work will be performed at times that will cause the least inconvenience to the member.

**2.3 Member's Equipment**

The member's electrical equipment and facilities shall conform and be installed in compliance with this tariff and with applicable federal, state, borough and city statutes, ordinances, and regulations. Chugach does not give an expressed or implied warranty as to the adequacy, safety or other characteristics of a structure, equipment, wire, conduit, appliance or device owned, installed or maintained by the member or leased by the member from third parties, by virtue of its inspection or non-rejection of the facilities or equipment. When inconsistencies exist between the installation standards established by the above referenced codes, the most stringent standards shall be applied.

**2.4 Consequential Damages**

Chugach disclaims liability for any injury, casualty or damage resulting from the supply or use of electricity or from the presence or operation of Chugach structures, equipment, wires, conduit, appliances or devices on the member's premises, except injuries or damages resulting directly from the negligence of Chugach, its officers or employees.

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**2. NATURE OF SERVICES OFFERED (Cont.)**

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**2.5 Voltage**

The standard practices of the industry regarding voltage, frequency and wave form referred to in Section 2.1 are as follows:

(a) Where available:

7,200	volts single phase
14,400	volts single phase
7,200/12,470	volts three phase 4-wire wye
14,400/24,900	volts three phase 4-wire wye

(b) 120/208	volts three phase 4-wire wye
277/480	volts three phase 4-wire wye
120/240	volts single phase
240/480	volts single phase

(c) For existing services on overhead system only:

120/240	volts three phase 4-wire delta
240/480	volts three phase 4-wire delta

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Chugach Electric Association, Inc.

**3. TYPES OF SERVICE PROVIDED**

**3.1 Permanent Service**

Where the member's facilities are such that Chugach has reasonable assurance that the premises will take electric service permanently and continuously, and where unusually large expenditures by Chugach are not required in order to provide service, Chugach will provide, at its own expense, the facilities necessary to serve the premises.

Where Chugach cannot be assured that the service will be used permanently and continuously, or where unusual expenditure by Chugach is required in order to furnish the service, facilities will be constructed only upon receipt of a contribution towards the cost of the facilities and a guarantee of continuous revenue from the service to the extent that may be deemed adequate by Chugach in order to justify its investment.

**3.2 Temporary Service**

When service is to be used for temporary purposes only, the utility may require the applicant to make a non-refundable payment sufficient to cover the cost of the installation and removal of the necessary facilities less the salvage value of materials returned to stock. The cost of installation and removal will include material, labor, equipment, payroll cost and overhead. These charges will be in addition to any required meter deposit and the energy customer and demand charges accumulated through the use of electric energy as determined pursuant to the applicable rate schedule.

If Chugach requires a prepayment, Chugach will prepare an estimate, valid for 30 days, for the applicable installation and removal costs. Prior to the commencement of installation, the applicant shall submit an advance payment equal to the estimated cost and shall agree to pay up to 110% of the estimate, if the actual cost exceeds the estimate. If the actual cost is less than the estimate, Chugach will refund the excess to the applicant.

Temporary service will not be provided for a period longer than 12 months unless, for good cause shown, Chugach approves an extension of time or unless an application has been made for permanent service.

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Chugach Electric Association, Inc.  
P.O. Box 196300 Anchorage, Alaska 99519-6300

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Chugach Electric Association, Inc.

3. EXTENSION OF SERVICE

3.1 Feasibility.

Chugach will construct the facilities necessary to extend service to any customer within its certificated service area if the extension of service is economically feasible. An overhead line extension will be considered economically feasible if the cost of the extension does not exceed five times the estimated gross annual income that will be derived from the sale of electricity delivered over the extension. An underground line extension will be considered economically feasible if the customer agrees to reimburse Chugach for the cost of necessary conduit, vaults, clearing, trenching and backfill for the extension and the remaining cost to Chugach does not exceed five times the gross annual income estimated by the Utility to be derived from the sale of electricity delivered over the extension.

3.2 Extensions in Subdivisions.

Line extensions into an area that is being subdivided for residential construction which contemplates the installation of an integrated electrical system to serve an entire subdivision, or a portion of a subdivision being developed in stages, will be constructed only pursuant to a written agreement between the developer and Chugach. Copies of the forms of agreement utilized by Chugach are filed with this tariff.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

Tariff Advice No.

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Chugach Electric Association, Inc.

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Chugach Electric Association, Inc.

3.3 Contribution for Low- Income Extensions.

If Chugach determines that the cost of the line extension to be borne by Chugach, other than extensions involving the total system within a new subdivision, will exceed five times the estimated gross annual revenue, Chugach will make the extension if the customer executes a written contract guaranteeing that the gross income derived from the line extension over a five-year period of time will meet or exceed the cost to Chugach of the line extension. The contract shall provide for monthly payment by the customer of the charges and fees for services furnished over the line, or one-sixtieth (1/60) of the construction cost borne by Chugach, whichever is greater. If additional customers apply for service from the line extension, service will be provided to them only upon execution of an agreement to incur a minimum monthly billing based on an equal apportionment of the one-sixtieth (1/60) of the costs among the total number of customers receiving service from the extension. All the contracts so executed shall terminate on a date five (5) years after the first connection to service.

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Chugach Electric Association, Inc.

**4. TECHNICAL PROVISIONS**

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**4.1 Metering**

**(a) General**

Electric energy and demand provided to the customer shall be determined by the registration of electric meters provided by Chugach. In cases where usage is fixed, Chugach may, at its option, elect to not meter the service but instead bill the member in accordance with the applicable rate schedule or by a special contract. If a meter in service is tested and found to have under-registered the amount of power delivered, Chugach will not charge the customer for the underbillings unless there is evidence of meter or electric service tampering by the customer.

**(b) Multiple Metering Locations: Individual Metering Required**

Each individual meter in a multiple metering installation shall serve only one dwelling unit or commercial/industrial space for facilities in which construction began after December 31, 1982, except as provided in (c) of this section.

For each individual meter in a multiple metering installation, the customer, developer, landlord or property manager is responsible for properly identifying the specific unit being served on each meter base or meter base socket and providing notification to Chugach of any changes in labeling. Each meter base socket shall be clearly and permanently identified designating the specific location being served (condominium / apartment unit number, street address, suite number, etc.). All lettering and numbering shall be a minimum of 3/4 inch in height.

If Chugach becomes aware of a situation whereby two or more meters have been registering for a service location other than that on record with Chugach, corrected billings will occur with the current billing cycle and shall apply on a going-forward basis. Chugach shall not be responsible for any billing errors resulting from the improper identification or labeling of meter bases or meter base sockets.

Multiple metering locations include but are not limited to condominiums, apartment buildings, zero-lot line residences, trailer parks, malls, and commercial / industrial buildings.

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Chugach Electric Association, Inc.

**4. TECHNICAL PROVISIONS (Continued)**

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**(c) Multiple Metering Locations: Individual Metering Not Required**

Individual metering in a multiple metering installation is not required under the following conditions:

1. For transient multiple occupancy buildings and transient mobile home parks, including but not limited to, hotels, motels, dormitories, rooming houses, hospitals, nursing homes, and mobile home parks for travel trailers;
2. For commercial unit space which is subject to alteration with change in tenants as evidenced by temporary construction of non-load bearing wall and floor separating the commercial unit spaces;
3. Where alternative renewable energy resources are utilized in connection with central heating, ventilating, and air conditioning systems; and,
4. In common building areas such as hallways, elevators, reception areas, water pumping facilities and electric hookups for motor vehicles.

**(d) Primary Metering**

Any member who is served by primary metering shall be responsible for all costs beyond the meter point. All equipment located on the member's side of the meter shall be furnished, installed, and maintained by the member.

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**4.2 Tampering with Meters**

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Tampering with meters is prohibited by Chugach and theft of service is a criminal offense under Alaska Law (AS 11.46.200). AS 42.20.030 also provides a civil penalty of three times the value of the service received plus three times the actual damages for interfering with or altering a meter.

In addition to statutory penalties, a fee as set forth in the applicable Schedule of Fees will be charged to a member who breaks a seal without authorization or otherwise tampers with Chugach's facilities. In flagrant cases, electric utility service will be discontinued (See Section 7.9). Authorization to break a meter seal will be given in appropriate cases on application.

**4.3 Meter Testing**

Except where a meter has been subject to tampering, it is very unlikely that it will register incorrectly.

Meters will be replaced and tested on application. If the meter does not over or under register by more than 2%, a charge as set forth in the applicable Schedule of Fees will be made to the member who requested the test.

When a meter in service is tested and found to have over-registered the amount of energy delivered by more than 2%, Chugach will recalculate the bills for service from the known date of error and will make a refund if the amount of adjustment exceeds \$5. If the beginning date of error is unknown, Chugach will refund the most recent member of record for the billed error for the period since the meter was last tested, not to exceed six months, or the period during which the most recent member of record received service through the meter, whichever period is shorter. Adjustments will be made in reference to 100% accuracy of the meter.

When a meter in service is tested and found to have under-registered the amount of the energy delivered, Chugach will not charge the member for the under billings unless there is evidence of meter or electric service tampering by the member.

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**4.4 Load Characteristics**

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**1. Non-standard Tolerances**

Where a member requires a degree of regulation of the characteristics of the electrical service greater than that normally furnished by Chugach under applicable codes and standards, the member shall be responsible for obtaining, owning, installing and maintaining the required regulating equipment.

**2. Undesirable Member Load Characteristics**

Chugach may refuse or discontinue electric service to members who operate equipment or devices that cause detrimental voltage fluctuations or produce harmonic distortion. As a condition of service, Chugach may require members to install at their own expense equipment that will eliminate the undesirable load characteristic.

- a. Detrimental voltage fluctuations include, but are not limited to, 20 percent unbalanced load between phases, or cyclical demand fluctuations produced by the member's equipment. Equipment or devices that cause detrimental voltage fluctuations include, but are not limited to, electric welders, large motors and arc furnaces.
- b. Equipment or devices that cause harmonic distortion, such as adjustable speed drives, electronic ballasts for fluorescent lighting, and switching power supplies for computers and electric vehicles, shall be filtered such that the distortion resulting from these devices is maintained within industry standards. Compliance with this requirement is by Chugach's measurement at the point of change of ownership between Chugach and the member, otherwise known as "the point of delivery".

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**3. Protective Equipment**

The member is responsible for providing suitable protective devices for the equipment on his premises. The member shall protect equipment with special service requirements from potentially harmful conditions, including, but not limited to, single-phase operation of equipment requiring three-phase service or under-and-over voltage conditions.

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**4.5 Underground Locate Service**

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The terms and conditions for locate service are as follows:

1. Locate service is defined as a field visit to a requestor's excavation site where up to 330 continuous feet of underground cable or facilities are marked as well as field visits where no locate markings are made as a result of no facilities being present within the area of excavation.

2. For locates in excess of 330 continuous feet, additional locates are defined as follows:

331 to 660 feet	1 additional locate
661 to 990 feet	2 additional locates
991 to 1320 feet	3 additional locates
(Each additional 330 feet shall be equal to one additional locate.)	

3. For a single requestor, Chugach will provide up to 30 locates per month without charge. Chugach will charge for locates that exceed the monthly allowances.

4. Except for emergency locate requests, an excavator shall request locate markings during normal business hours, not more than 15 business days and not less than two business days prior to the excavation date. Chugach may charge for locates that are requested to be completed in a time period that is less than two business days from the request date, or locates requested to be completed during non-Chugach work hours.

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**4.5 Underground Locate Service (Continued)**

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The terms and conditions for locate service are as follows:

5. Locates provided for any purpose other than excavation will be charged at cost. This includes locates requested to be completed more than 15 business days before the excavation date.
6. Chugach will not charge for emergency locates. Chugach may charge for locates that are requested for an emergency, but no emergency exists. Emergency locates are not included in the monthly allowance.
7. Chugach may charge for remarking facilities that previously have been marked for the same excavation project, if the original markings have not been maintained by the requestor.
8. Any locate charges assessed by Chugach will be made at cost.
9. In cases where a site meet locate is requested, Chugach will assume only the cost of a normal locate. The additional cost between a normal locate and a site meet locate is the responsibility of the requestor. For site meet locates, the additional payment and scheduling arrangements shall be between the requestor and the company performing the work.
10. Utilities providing more than 30 design or excavation locates per month to Chugach shall be given a credit on an hourly basis against any amount due under this section. Chugach will treat design and excavation locates on an equivalent basis for locates provided to and by other utilities.

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**6. CONDITIONS OF SERVICE**

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**6.1 Membership**

Chugach is a non-profit electric cooperative corporation, and membership therein is a condition of receiving electric service. Individuals, singly and jointly, partnerships, associations, public and private corporations, and government units may become members by filling out an application and presenting sufficient identification. There is a non-refundable membership fee, as set forth in the applicable Schedule of Fees, payable at the time of application. A membership is not transferable.

**6.2 Application for Service**

Each applicant for service shall complete and sign Chugach's standard membership application form. Providing complete and accurate information on the form is a condition of service.

In the absence of a signed agreement or application for service, the supply of service by Chugach and its acceptance by the member shall constitute an agreement and acceptance of Chugach's policies, rules, and regulations.

Service will be established to existing facilities within five (5) working days of Chugach's receipt of a completed application. A connect fee will be charged for this service. Charges for service connection are set forth in the Schedule of Fees.

In the event an applicant requests establishment of service outside regular business hours, the applicant will be charged an after-hours hook-up charge as set forth in the applicable Schedule of Fees.

Where construction of a new or secondary service is required, Chugach will complete construction of an applicant's secondary service facility within five (5) Chugach working days following notice to Chugach that the applicant's service entrance equipment has been installed and passed inspection by the appropriate agency. If Chugach fails to complete construction by that date, due to the fault of Chugach or its contractors, Chugach will pay the applicant a performance guarantee payment as identified in Section 8.18. Such payments are the applicant's only remedy for Chugach's failure to complete construction in a timely manner. Chugach will not be responsible for damages from delay.

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**6.3 Transfer of Service**

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A member may have service transferred from one location within the Chugach service area to another by submitting new application information and paying a connect fee as set forth in the applicable Schedule of Fees. The connect fee for transfer of service will be included in the next billing cycle.

**6.4 Authorization**

All electric service requests must be submitted by the member, the member's attorney-in-fact, or the member's authorized agent. An officer or authorized representative may make orders on behalf of an association, corporation, or government unit. Joint members may act for each other.

**6.5 Former Indebtedness**

Chugach may refuse to extend service to an applicant who has an overdue account with Chugach for previous utility service until payment in full is made. This section applies to former members who apply for membership directly or through some agency or relationship. D, N

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**6.6 Deposits**

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Chugach may require a separate deposit for each meter installed. Applicants may be required to pay a deposit when they apply for service. The amount will be determined by Chugach after consulting with the applicant. Under no circumstance will the deposit exceed two times the average monthly bill, as estimated by Chugach.

Chugach will pay the actual rate of interest earned on deposits for a single meter which total more than \$100.00. However, if delinquent payments result in interruption of service, Chugach will not pay interest on the deposit for twelve months after reestablishing service.

Chugach will waive or refund a deposit plus any accrued interest within ninety days if the applicant:

- (a) has previously established a good payment record with Chugach within the last three (3) years; or,
- (b) provides written verification from the electric utility which last provided comparable service stating that the applicant was not delinquent in payment for the last twelve consecutive months of service at the prior location.

Chugach will refund deposits plus any accrued interest within thirty days after the earlier of:

- (a) Twelve months continuous service, if the member has not been past due in the payment of Chugach bills more than twice, and has not been delinquent in the last six months and is not past due at the time of review; or,
- (b) Termination of service, to the extent the amount held exceeds any balance due to Chugach for electric service, late fees, and finance charges.

Chugach will provide deferred payment deposit agreements for residential applicants where economic hardship is clearly demonstrated.

Chugach may institute or adjust a deposit for an established member who is delinquent in payment.

A deposit remitted in compliance with the requirements of these rules and regulations does not relieve a member from the obligation to pay their utility bills by the date that payment is due. D, N

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**6.7 Easements**

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Chugach requires that easements providing a suitable right-of-way for distribution lines needed to reach the applicant's premises be executed prior to providing service. Chugach may also require new applicants, prior to receiving service, to execute additional specific easements where necessary for future or additional system extensions. Access to Chugach easements must be available at all times. (See Rule 5.10.)

**6.8 Inspections**

Except in emergency situations, a new or modified service will not be connected until Chugach receives evidence that an inspection of the premises has been conducted by the appropriate authority to ensure compliance with minimum safety requirements of the National Electrical Code, the National Electric Safety Code and the Alaska General Safety Code. Any inspections performed by Chugach will be limited to the supply side of the service entrance equipment.

**6.9 Installation and Accessibility of Chugach Property**

Meters and the main point of disconnection will be installed on the outside of the building and to minimum Chugach service standards (which are available from Chugach). Members will be required, at the request of Chugach, to move meters to an outside installation at the member's expense.

Consumers shall provide any properly identified employee of Chugach with unrestricted access to Chugach's property at all reasonable times for any purpose, including, but not limited to: reading meters, testing or inspecting members' load or equipment, repairing, removing, or replacing any equipment belonging to Chugach, and clearing access to Chugach property (i.e., pedestals, lines or transformers).

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**6.10 Protection of Chugach Property**

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Any equipment or devices furnished by Chugach shall remain its property and may be removed by Chugach at any time. To protect its equipment and service, Chugach may seal the switch or other device, equipment or facilities located on the customer's premises to prevent access by unauthorized persons.

The member is responsible for the safekeeping of Chugach's property located on the member's premises and shall not connect to, interfere with or alter the conductor, meters, seals or other facilities used in connection with rendering electric service or permit connection to, interference with, or alteration by any person other than an authorized agent or employee of Chugach. A member shall take all reasonable precautions against unlawful interference with that property and take all steps necessary to ensure access to that property is unimpaired.

**6.11 Member Complaints**

Member complaints should be directed to the Director of Member Services. Chugach will provide a response to each service complaint within 10 working days of its receipt. If the member informs Chugach that they are not satisfied with the initial response, the complaint will be directed to the appropriate division executive manager for a response. If the member is still dissatisfied, the complaint will be directed to the Chief Executive Officer. If the matter is still unresolved, the complaint will then be directed to the Chugach Board of Directors. Members may, however, appeal to the Regulatory Commission of Alaska at any time.

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**6.12.1 Service Center**

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Location: 5601 Electron Drive, Anchorage, AK 99518  
Lobby Hours: 8 a.m. to 5 p.m., Monday through Friday  
Night deposit available

Member Services email address  
Chugach Website

[service@chugachelectric.com](mailto:service@chugachelectric.com)  
[www.chugachelectric.com](http://www.chugachelectric.com)

Payment Remittance mailing address

PO Box 196760  
Anchorage, AK 99519-6760

General Mailing Address

PO Box 196300  
Anchorage, AK 99519-6300

Main Number  
Dial Toll Free (In Alaska)

(907) 563-7494  
(800) 478-7494

**Member Services**

Member Service (907) 563-7366  
Member Service Facsimile (907) 762-4678  
Credit & Collections (907) 563-5060  
Med-Alert (907) 563-7366

**New Service and Line Installation Information**

New Service Request (907) 762-4729  
Line Installation or Extension (907) 762-4631  
Easements (907) 762-4781  
Existing Service Line Modifications (907) 762-7679  
Service Inspections (907) 762-7679

Underground Locates  
Power Outage Reporting  
Danger Tree Hotline  
Power Theft Reporting

811  
(907) 762-7888  
(907) 762-7227  
(907) 762-4731

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**7. BILLING AND COLLECTIONS**

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**7.1 Payment of Bills**

Bills for electric service are due and payable immediately on the billing date shown on the bill. The billing date will not vary from the postmark date by more than three (3) days.

Payments for service may be made by cash, check, debit or credit card through a variety of payment channels, including Chugach’s website, Interactive Voice Response phone system, mail, or in-person at our service center as indicated in Section 6.12.1 of this tariff. Beginning March 1, 2018, Chugach will accept credit card payments without the customer paying a third-party attendant transaction fee. A maximum of two credit card payments totaling no more than \$2,000 will be accepted within a 26-day period, per member account. A bill will be considered paid when the money is received by Chugach.

A member’s failure to receive bills or notices which have been properly addressed and placed in the United States mail or delivered electronically will not prevent the bills from becoming past due or delinquent or excuse the member’s responsibility for payment.

No member who tenders a non-sufficient funds check or other dishonored method of payment will be relieved of the obligation to pay Chugach under the original terms of the bill or be entitled to defer Chugach’s right to disconnect service for non-payment of bills.

**(a) Past Due Bills**

Bills which are not paid in full within 25 days of the billing date will be considered past due unless the member enters into a deferred payment agreement with Chugach, in accordance with Section 7.2 of this tariff, within the 25-day period. A late payment fee, as set forth in the applicable Schedule of Fees, will be charged for all bills that become past due. All past due amounts as well as the late charge will be included and separately indicated on the following month’s bill.

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**(b) Delinquent Bills**

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All past due amounts and the associated late charge which are not received at the close of the following billing cycle will be considered delinquent unless, within that period, the member enters into a deferred payment agreement with Chugach. A member who is delinquent in payment is subject to disconnection under the procedures set out in Sections 7.9 and 7.10 of this tariff. In addition to the late charge, all past due amounts for Large General Service will accrue interest at the legal rate of interest consistent with AS 45.45.010 from the date the bill became past due.

A member who has entered into a deferred payment agreement in accordance with Section 7.2 of this tariff will not be subject to disconnection for non-payment of the delinquent bill, as long as the member complies with the terms of the deferred payment agreement.

A member who has been disconnected for non-payment will only be reconnected if the member pays the amount due, plus a reconnection fee, and an additional deposit if required, or enters into a deferred payment agreement, if qualified to do so.

Chugach will charge a fee for the reconnection of service, during working hours and outside of working hours, as set forth in the applicable Schedule of Fees.

**7.2 Deferred Payment Agreements**

A residential member who is not able to pay the full amount of a bill for service or security deposit because of economic hardship may enter into a deferred payment agreement with Chugach. The member must pay one third of the bill, or more at the option of the member, at the time that agreement is made. The agreement must contain:

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**7.2 Deferred Payment Agreements (Continued)**

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- (a) A stipulation that the member will pay future bills for service when they are due;
- (b) A stipulation that the member understands that failure to observe the terms of the agreement will result in disconnection of electric service pursuant to Section 7.10 (b) of this tariff, and the full amount of the bill plus all applicable fees and deposits becoming due and payable; and,
- (c) A schedule of monthly payments, not to exceed twelve months from the date of the agreement.

All deferred payment agreements must be in writing, and must be signed by the member and an authorized representative for Chugach.

All amounts outstanding under a deferred payment agreement shall accrue the legal rate of interest.

**7.3 Multiple Signatories**

When the application for service has been signed by two or more individuals, Chugach may collect the full amount of any bills for service from any one of the applicants.

**7.4 Payment During Member's Absence**

It is the responsibility of the member to make pre-payment or other satisfactory arrangements with the credit office if absence from the community or other reasons will preclude the timely payment of his or her account.

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**7.5 Meter Reading and Estimated Billings**

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Chugach shall separately bill for each meter at a member's premises on a monthly basis.

Chugach will read each meter on a regular monthly or bimonthly schedule. The periods between meter readings will vary because of weekends, holidays and scheduling. No adjustment to billings will be made on account of such variations. Instead of reading a member's meter each month, Chugach may estimate the meter reading in alternate months. Billings based on estimated usage will be so identified. Adjustments to estimated use will be made when the next actual meter reading is obtained, normally in the next month. Chugach may bill based on estimated usage for two consecutive cycles if severe weather conditions prevent meter reading, or circumstances beyond Chugach's control make meter reading dangerous or not reasonably feasible.

**7.6 Make-Up Bills**

Except as provided for in 3 AAC 52.465, Chugach may render a "make-up" bill, without finance charge, for previously unbilled electric service as a result of a billing error by Chugach, or more than two consecutive estimated bills, subject to the following restrictions:

- (a) the initial make-up bill must be issued within 6 months of provision of the previously unbilled service; and,
- (b) the period of payment, at the option of the member, may extend at least as long as the period during which the excess amount accrued, or as long as necessary so that the amount of each bill is not greater than 150% of the normal estimated billing amount for that period.

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**7.7 Level Pay Billing**

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**(a) Eligibility**

The Level Pay Plan is a voluntary billing option available to residential and small general service members who receive service at a location where 12 months of billing history is available, and whose account is not currently delinquent, unless the member has entered into a deferred payment agreement. Participants in the plan are subject to Chugach's rules and regulations expressed in this tariff. Members interested in signing up for the Level Pay Plan may contact Chugach's Member Services Department as indicated in Section 6.12.1 of this tariff.

**(b) Billing Amount**

A member electing to participate in the Level Pay Plan will pay a monthly amount equal to the average of the total of the most recent 12 months' bills as of the date the Level Pay Plan billing amount is established. This monthly payment shall be made for 12 successive months. After 12 months a new Level Pay Plan billing amount will be calculated based on the average bill of the prior budget year less any over-recovery or plus any under-recovery from the prior year. Thus, any variance between actual and level pay bills is included in the calculation of the new level pay billing amount by spreading it over the 12 months in the new budget year. Upon request, at the time the new Level Pay Plan billing amount is established. Chugach will provide customers with a separate check representing any over-collected amounts.

**(c) Adjustments to Billing Amount**

The accounts of Level Pay Plan members will be reviewed periodically during the yearly billing cycle to compare actual bills with the budgeted amounts. If this review indicates a significant variation of actual billings versus anticipated, seasonally adjusted billings, Chugach will adjust the member's monthly level pay figure to bring the account into approximate balance by the last level pay bill in the cycle.

The monthly Level Pay Plan billing amount may be adjusted for changes in Chugach's base rates or fuel adjustment factors when such changes have, in the judgment of Chugach, a material impact on member bills.

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**(d) Information on Member's Bills**

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The monthly bill of each Level Pay Plan member will contain the following additional information relevant to the plan:

1. Actual consumption (kWh);
2. Amount due for actual consumption;
3. Budget billing amount due; and
4. Accumulated variation in actual versus Level Pay Plan billing amount.

**(e) Delinquency and Termination**

If a member under the plan fails to pay the Level Pay Plan billing obligation in any month, including the settlement month, normal collection procedures will be followed, including disconnection of electric service, if necessary.

Members participating in the Level Pay Plan who terminate service will be removed from the plan and the entire outstanding amount for actual usage shall be due and payable on the member's final bill. Any credit balance owed the member will be credited to the final bill or refunded.

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**(e) Delinquency and Termination (Continued)**

D, N

Any member who terminates participation in the Level Pay Plan, but not service, will have any outstanding credit balance applied to their current bill. Any credit balance in excess of that credited to the next bill will be credited to future bills or refunded at the member's request.

An outstanding balance owed Chugach will be due on the member's current bill and subject to normal collection procedures.

**(f) Disputes**

Members who dispute the correctness of a bill shall notify Chugach and state reasoning in support of their position. Such notice shall not be sufficient reason to withhold payment of the undisputed portion of the bill. If a bill is found to be incorrect, Chugach will credit the amount of overpayment to the next bill rendered. Any amount due the member, in excess of that credited to the next bill, will be credited to future bills or will be refunded at the member's request.

**7.8 Non-Sufficient Fund Balance Fee**

Without waiving any rights under AS 09.65.115 to collect penalties, a non-sufficient fund balance fee as set forth in the applicable Schedule of Fees will be charged for dishonored checks, overdraft notices related to automated bank withdrawals, or non-sufficient fund balances associated with credit card charges. Any person who has been charged two consecutive non-sufficient fund balance fees within a twelve-month period may be denied the privilege of paying using the payment mediums to which the non-sufficient balance fund fees were applied. Future payments will be required to be in cash or another medium of payment approved by the Manager of Credit and Collections or a Member Services representative.

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**7.9 Disconnection of Service**

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**(a) By Request**

If a member contacts Chugach, in person, in writing, or by another contact method, to request that service be disconnected, Chugach may hold that member responsible for all services, up to the later of the date of the disconnection, or three working days after the date of the member request.

**(b) Without Notice**

Chugach may disconnect a member's service without advance written notice under the following conditions:

1. an immediate hazard exists which threatens the safety or health of the member, the general population or Chugach's personnel or facilities;
2. Chugach has evidence of meter tampering or fraud by the member; or,
3. a member has failed to comply with the curtailment procedures imposed by Chugach during emergency supply shortages.

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**(c) With Notice**

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Chugach may disconnect, after having provided notice to the member as provided in Section 7.10 of this tariff, for any of the following reasons:

1. failure of the member to pay a delinquent account within 55 days after the initial rendering of the bill unless the member has entered into a deferred payment agreement;
2. failure of the member to meet or maintain Chugach's deposit requirements, unless the member has entered into a deferred deposit payment agreement;
3. knowing and continued failure of the member to provide Chugach with reasonable access to its meter, equipment, or property;
4. member breach of a special contract between Chugach and member for electric service;
5. necessity of Chugach to comply with an order of any governmental agency with proper jurisdiction;
6. where there is any installation which, in the opinion of Chugach, is injurious to the operation of Chugach's system or its service to other members; or,
7. continued use of temporary service for longer than 12 months, unless Chugach has approved the extension or an application for permanent service has been made (See Rule 2.3).
8. the customer's operation of utilizing equipment is used in a manner that is detrimental to the service of Chugach or its other customers.

Chugach will restore service within 3 working days of correction of the conditions which resulted in the disconnection. Correction includes execution of a deferred payment agreement. The fee for reconnection during working hours and outside of working hours is set forth in the applicable Schedule of Fees.

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**(d) Exceptions**

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Chugach will not disconnect service based on any of the following reasons:

1. delinquency in payment for services rendered to a prior member at the premises where service is being provided, unless the prior member continues to occupy the premises;
2. failure of the member to pay for services or equipment which are not regulated by the Regulatory Commission of Alaska;
3. non-payment of a bill related to another class of service at a different service location;
4. a member disputes the amount due on the delinquent account, complies with Chugach's tariffed rules on member bill disputes, and the dispute remains under investigation. However, a member shall pay all undisputed amounts, and Chugach may proceed under the terms of this tariff to disconnect service for failure to pay undisputed amounts; or,
5. the member is unable to pay the full delinquent amount due, qualifies under Chugach's tariffed eligibility requirements for deferred payment agreements, and is in compliance with a signed deferred payment agreement, or is in the process of a timely negotiation for such an agreement.

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**7.10 Notice Requirements for Disconnection of Service**

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**(a) First Notice**

Chugach will mail to members a written form notice of its intent to disconnect service at least 15 days before the scheduled disconnection date, except when a member has failed to comply with a deferred payment agreement, or qualifies for immediate disconnection under Section 7.9 of this tariff.

1. when Chugach has prior knowledge that the residence is occupied by a person who is seriously ill, elderly, handicapped, or dependent on life support systems, Chugach will give at least 30 days written notice of disconnection. If Chugach is notified that such a person occupies the residence after issuing a 15-day disconnection notice, Chugach will extend the disconnection date another 15 days, and notify the member of the extension.
2. where Chugach knows that a landlord/tenant relationship exists and the premises are served by a master meter and the landlord is the member of Chugach, each tenant served through the meter will be given individual notice of the pending disconnection at least 15 days before it is scheduled to occur.
3. where Chugach knows that a landlord/tenant relationship exists and the premises are individually metered, and the landlord is the member of Chugach, the tenant or occupant will be notified in writing of the option of subscribing for service in his or her own name when the landlord has not corrected the situation which has made the premises subject to disconnection. Chugach may disconnect the service to the premises 15 days after the mailing of the notice, if the tenant or occupant fails to subscribe for service or arrange for payment of their previously outstanding balance, if any.
4. Where the tenant is the member of Chugach, the landlord will be notified in writing of the option of subscribing for the service provided at the tenant's premises when the tenant has not corrected the situation which has made the premises subject to disconnection. Chugach may disconnect service to the premises 15 days after the mailing of the notice, if the landlord fails to subscribe for service or arrange for payment of its previously outstanding balance, if any.

The notice will contain at a minimum the information required by applicable regulation. A copy of the notice will simultaneously be sent to any third party designated by the member on the service application.

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**7.10 Notice Requirements for Disconnection of Service (Continued)**

D, N

**(b) Second Notice**

At least three working days prior to disconnection, Chugach will attempt to contact the member either by telephone or by a visit to the member's premises. The "shut-off" notice or completed telephone call will provide the member with all information required by the applicable regulations.

**1. Contact by Telephone**

If the notice is given by telephone, Chugach will make reasonable attempts to contact the member. Contact by Interactive Voice Response (IVR) or similar technology may be utilized, so long as the member is provided the opportunity to reach a Chugach representative through this medium. At least three attempts will be made. Records will be kept of each attempt.

**2. Field Contact**

If notice is given by visits to the member's premises, a "shut-off" notice will be hand-delivered to the member or left in a prominent place if no contact is made.

**3. Contact by Mail**

If telephone contact cannot be made, a first class, postage-prepaid letter may serve as an alternative to a hand-delivered notice if the premises is located in a secured building or is inaccessible due to other circumstances, or if the member lives 25 or more miles from the office that delivers notices. If used, the letter will be mailed at least five days prior to disconnection of electric service.

Within 10 days of the date specified on the shut-off notice (on-site, telephone or U.S. Mail), Chugach may disconnect service to a member without further notice, between 8:00 a.m. on Monday to 5:00 p.m. on Thursday. Service will not be disconnected on a Friday or a day preceding a holiday.

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**7.10 Notice Requirements for Disconnection of Service (Continued)**

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**(c) Landlord/Tenant Collections**

Chugach will not attempt to recover from a landlord amounts due Chugach from the tenant, or recover from a tenant amounts owed by the landlord, nor will payment of such amounts be a condition of extending service to the applicant. However, if the applicant owes an outstanding balance to Chugach for service to that service address, payment of this balance and all associated late charges, delinquent payment fees and finance charges will be required before service will be extended to the applicant, whether a landlord or a tenant. Chugach will require a deposit as set forth in Section 6.6.

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**7.11 Annual Prepaid Bill**

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A member who prepays electric service for a future twelve-month period will receive a credit to their bill. The credit amount is identified on Chugach's Schedule of Fees and Credits (Tariff Sheet No. 62). The prepayment amount will be calculated by multiplying the average monthly bill at the location by twelve. The credit will be applied once payment is received. Any outstanding balance on the account must be paid prior to or with the prepayment. Service will continue to be delivered and paid for on an actual cost basis by monthly credits against the prepayment amount less the billing credit provided by Chugach. The actual period of prepayment will vary based on usage so that usage greater than projected will result in a shorter prepayment period while less usage than projected will result in a longer prepayment period. Members will continue to receive monthly billing statements, and if the prepayment credit is reduced to zero, members will be responsible to remit payment for the amount due. If the member terminates service from Chugach, the unused credit will be refunded.

**7.12 Electronic Bill Presentation (Paperless Billing)**

A member may elect to receive the monthly electric bill for an account electronically and no longer receive paper bills for that account. Members that elect to participate in paperless billing for an account will receive a one-time credit to their bill for that account. The credit amount is identified on Chugach's Schedule of Fees and Credits (Tariff Sheet No. 62). The member may choose to discontinue paperless billing at any time. However, a member may not be provided more than one electronic billing credit for each account. Notices for termination of electric service for nonpayment will continue to be delivered by U.S. Mail.

**7.13 Adjustment for Tax or Surcharge**

The amount of any tax or surcharge imposed by Federal, State, Municipal or other governmental authority on the Association, or its revenue or income, that is not required to be recovered through a tariff approved by the Regulatory Commission of Alaska shall be apportioned to the locality in which such tax or surcharge is effective, and among the various classes of service furnished therein. Such amounts to be collected shall constitute an additional charge billed to members. Such taxes or surcharges shall be collected and administered consistent with the manner prescribed by the governing agency.

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**7.14 RESALE OF ELECTRICITY**

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**Sale of Electricity for Resale**

- (a) A retail member shall not sell or otherwise provide electric service furnished by Chugach. This Rule does not prohibit a member from sub-metering for purposes of apportioning costs among tenants or other users.
- (b) Installations in existence and reselling power prior to February 2, 1973, may continue to resell electric service through existing metering under Chugach's standard rates applicable to the sub-metered premises until such time as the entire service is discontinued or the facilities are altered or upgraded.
- (c) This Rule does not prohibit a member from furnishing unmetered electric service to rental units not required to be individually metered under Section 8.6 where the cost of electricity is included in the rental charge.
- (d) The sale of electric vehicle charging service to a third party from an electric vehicle charging station shall not be considered the resale of electricity.

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8. SERVICE CONNECTIONS

8.1 General Requirements.

The customer shall own, install, operate and maintain the service equipment, other than the metering equipment, and all wiring and electrical facilities on the customer's side of the service equipment.

8.2 Location and Installation of Meters.

Prior to wiring a building or structure, or performing any electrical construction for a new service or change in service, the customer shall request Chugach to designate the location of the customer service equipment. The service equipment shall be on the side of the building closest to the service pole or the origin of the underground service conductor, unless aesthetic factors dictate otherwise. Chugach will not be obligated to provide service to a structure at a point not designated by Chugach and a customer who proceeds without the designation of location may be required to modify the wiring or other construction to provide for service equipment at a location subsequently designated by Chugach. The metering equipment may not be placed in a locked area. The customer shall, at his own expense, extend his wiring for a new and approved meter location whenever the existing meter has become inaccessible or potentially inaccessible for

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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inspection, reading and testing.

8.3 Primary Facilities.

Loads in excess of 50 kilowatts of demand may require primary facilities for adequate service. If primary service is required, the customer will be required to provide space on his property at no cost to Chugach for the transformers, switches, regulators and other equipment necessary to serve the load. The space provided may be outdoors for pad-mount transformers or in a vault inside a building in accordance with Chugach's detailed service specifications.

8.4 Overhead Service.

Chugach will own, install, operate and maintain the overhead service necessary to connect the customer's service equipment to Chugach's distribution facilities. A permanent overhead service will not be provided where Chugach's distribution facilities are underground.

8.5 Underground Service.

Where Chugach's distribution facilities are underground, and in the Central Business District, underground services are required. A customer may obtain an underground service connection to Chugach's overhead distribution system on request. An underground service

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may consist of cables buried directly in the earth, if later excavation for repair or replacement of the service is not objectionable. Where the customer desires to minimize the risk of future excavation on his property, or where the service crosses public sidewalks, streets or alleys, the service conductors shall be installed in buried conduits.

1. Chugach will furnish, connect and maintain, at its expense, all service conductors, except that where the customer's service entrance equipment utilizes bus duct for the connection to Chugach's transformer(s), the customer shall furnish and install the bus duct and shall make the connection to the transformer(s). The customer shall give notice to Chugach in case of a fault or failure of the service entrance bus way (bus duct). The method of connection shall be as specified by Chugach. In the case of a fault or failure in the service entrance bus way (bus duct), the customer shall be liable for necessary repairs. Chugach will disconnect the primary feed to the transformer immediately upon receiving notice of such a fault and reconnect upon receiving notice that the fault or failure has been repaired.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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2. The customer shall reimburse Chugach for the cost of all pavement, cutting, thawing, removal and replacement performed by Chugach.
3. Chugach shall perform at its expense all excavation, trenching and backfilling for underground service connections.
4. Where the service requires the installation of conduit on, within, or under the customer's building, the customer shall make the installation, terminating the conduit clear of the building where it is accessible to Chugach. The conduit size and type shall be as specified by Chugach. Chugach will install all other conduit required for the service.
5. An underground service will not be installed in frozen ground unless the customer agrees to reimburse Chugach for the cost of thawing and related expenses. In general, if an application for underground service is received after September 1 and before spring of the following year, the service will be installed in frozen ground and the customer will be liable for the consequent expenses.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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8.51 Underground Locate Service

Chugach will commence to furnish a locate in accordance with Anchorage Municipal Code Section 26.90.030 within regular business hours after receipt of a request for locate service in the designated area. Those requesting underground locate service will be charged on the following basis:

1. Chugach will provide up to thirty (30) underground locates per month per requester at no charge provided locates are made during normal working hours of 7:00 a.m. to 3:00 p.m. Locates required after normal working hours will be billed at the overtime rate.
2. Underground locates in excess of thirty (30) locates per month will be charged at Chugach direct labor cost plus equipment cost.
3. Utilities providing more than thirty (30) underground locates per month for Chugach shall be given credit, on an hour for hour basis, against any amount due under this section.
4. One locate visit shall be counted for each field visit by an Chugach locator regardless of final markings. Additional locates shall be counted on the occasion where vehicle transportation is required of all locate equipment or locate equipment requires relocation to further transmit a signal. Any locate effort exceeding forty (40) minutes in duration shall be counted as one locate. Each additional forty (40) minute interval shall be counted as an additional locate.
5. If locate service encompasses excavation work which will require more than one day to complete, the person or entity requesting the locate shall provide to Chugach a schedule of the excavation work for which locate service is to be provided.
6. Billing for charges under this section shall be monthly, and shall be due and payable within 10 days of receipt.
7. Chugach may allow the requestor of locate service to contract with a contractor approved by Chugach to locate Chugach's cable at the requestor's own expense and risk.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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8.6 Services to Multi-Occupant Buildings

Except as specified below, Chugach will install an individual meter to measure the energy consumption attributable to each residential and commercial unit in a multiple occupancy building if construction (for the purpose of this section, is defined as begins when the footing are poured) of the building was begun after December 31, 1982.

1. Individual meters are not required:

- a. For transient multi-occupant buildings including, but not limited to, hotels, motels, dormitories, rooming houses, hospitals, nursing homes;
- b. For commercial unit space which is subject to alteration with changes in tenants as evidenced by temporary, construction of non load-bearing walls or floors separating the commercial unit spaces;
- c. Where alternative renewable energy resources are used in connection with central heating, ventilating, and air conditioning systems; and
- d. In common building areas such as hallways, elevators, reception areas, and water pumping facilities.

The customer must arrange the wiring of a multi-occupant building so that the wiring for all stores, apartments, or other individual units will terminate at a common point or points designated by

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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Chugach. Multiple points of delivery or metering on the same premises may not be utilized without prior written consent of Chugach.

Prior to the installation of a meter, the meter bases in multiple metered buildings shall be permanently identified in a manner which will designate the store, apartment or another unit being metered and the class of service contemplated. Once identified, the meter will be read to measure consumption according to the original identification and Chugach will not be responsible for any billing errors due to improperly identified, meter bases unless prior written notice has been provided to Chugach of the change of identification.

8.7 Service to Trailer Courts.

Chugach will furnish and install the distribution system necessary to provide metered electric service to each space in a trailer court. The trailer court owner shall grant easements necessary to construct the distribution system and shall provide the necessary service equipment and wiring on the load side of the service equipment in accordance with Chugach's detailed service specifications. Chugach will provide and install the necessary meters in ganged service equipment provided and installed

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by the owner. If the owner desire underground distribution facilities he shall reimburse Chugach for the cost of clearing, trenching, backfill and conduit for the underground facilities.

As an alternative to the foregoing, a trailer court owner may elect to take electric service at a single delivery point under the appropriate general service rate schedule. If this election is made, the owner shall install, operate and maintain all electrical facilities on the load side of the point of delivery. The owner may not meter or bill separately the electricity furnished to individual tenants.

The above alternative method does not apply to trailer courts where construction was begun after December 31, 1982. For the purpose of this section, mobile home parks, for travel trailers with electric hook-ups for motor vehicles are not included.

8.8 Three-Phase Service.

Three-phase service will not be provided to a customer if the connected load is less than 5 horsepower unless three-phase service is immediately available on existing circuits.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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9. RELOCATION OR CONVERSION OF FACILITIES

9.1 Relocation of Facilities.

Chugach will relocate any portion of its facilities on request if the relocation will not interfere with, or increase the cost of, service to its customers. The party requesting the relocation shall execute a written agreement to pay the cost of relocation, which shall be calculated as the cost of constructing and installing the new facilities, plus the cost of removing the replaced facilities, less the accrued depreciation and salvage value of the replaced facilities. Service conductors and equipment will be relocated at the sole cost and expense of the requesting party. Relocations at the request of the Alaska Department of Highways will be performed in accordance with applicable laws of the State of Alaska.

9.2 Conversion of Overhead to Underground Facilities.

Chugach will convert overhead facilities to underground facilities on request. The customers requesting the conversion shall pay the cost of the conversion which shall be calculated as the cost of constructing and installing the new facilities, plus the cost of removing the overhead facilities, less the accrued depreciation and salvage value of the overhead facilities. Service conductors and equipment will be converted at the sole cost and

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expense of the customer. Written agreements shall be executed prior to the commencement of a conversion project.

Written agreements will not be required for conversion of overhead facilities to underground facilities in a special improvement district created by the City of Anchorage for that purpose under the provisions of chapter 3.08 of the City of Anchorage Municipal Code, copies of which are filed with this tariff.

Conversion of facilities within the Central Business District will be performed at no cost to the customer.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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**JAN 14 2022**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**NET METERING SERVICE**

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(Applicable to Eligible On-Site Generation Systems 25 kW or Less)

Available on a first-come, first served basis to retail customers that operate and own or lease eligible on-site generation system(s) that are interconnected and operate in parallel with Chugach’s distribution facilities. Generation systems shall contain a nameplate capacity of 25 kW or less per customer premises and be used primarily to offset part or all of the consumer's electric energy requirements.

Service under this schedule is available until the cumulative nameplate generating capacity of all retail net metered systems equals 5.0 percent of Chugach’s average retail system demand. Chugach may limit net metering installations in portions of its distribution system that are reasonably necessary to address system stability constraints or other operational issues.

**Monthly Rates**

Electric bills for net metered consumers shall be computed in accordance with the applicable retail service rates contained in this operating tariff, with electric energy (kWh) calculated as follows:

- 1) If Chugach furnished more electric energy to the consumer than the consumer supplied to Chugach during the monthly billing period, Chugach shall bill the consumer for the number of kWh of net electric energy supplied by Chugach to the consumer at the applicable retail rates contained in the operating tariff; or
- 2) If the consumer supplied more electric energy to Chugach than Chugach supplied to the consumer during the monthly billing period, Chugach shall credit the consumer's account with an amount derived by multiplying the kWh of net electric energy supplied by the consumer to Chugach by the non-firm buyback power rate contained on Tariff Sheet No. 103.

Dollar amounts credited to the account of a net metered consumer shall be used to reduce amounts owed by the consumer in subsequent monthly billing periods. Dollar amounts credited do not expire or otherwise revert to Chugach. Unused credits will be paid to the consumer in the event electric service is terminated.

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Chugach Electric Association, Inc.

**NET METERING SERVICE (CONTINUED)**  
(Applicable to Eligible On-Site Generation Systems 25 kW or Less)

N

**Conditions**

- 1) Non-Utility Generator may not commence Parallel Operation of generation facilities without final written approval from Chugach.
- 2) Installation and operation of Non-Utility Generators must be in conformance with Chugach requirements and all applicable federal, state and local safety codes and regulations. At a minimum, interconnections must be consistent with the most current interconnection standards approved by the Commission and with IEEE 1547 standards.
- 3) All customer on-site generation systems interconnected and operating in parallel with Chugach's electric system shall be in compliance with the interconnection and operating guidelines contained in Appendix A to this tariff, "Interconnection and Operating Requirements for Non-Utility Generation up to 5,000 kVA."
- 4) Any customer applying for net metering service shall submit a completed application (Application for Non-Utility Generation: Class A – Net Facilities) contained in Appendix A of Chugach's operating tariff.
- 5) To be eligible for interconnection under a net metering program, a consumer generation system must:
  - a. Include an electric generator and its accompanying equipment package;
  - b. Be physically interconnected to the consumer's side of the meter from which Chugach provides electric service to the consumer;

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**NET METERING SERVICE (CONTINUED)**

(Applicable to Eligible On-Site Generation Systems 25 kW or Less)

N

**Conditions (Continued)**

- c. Generate electric energy from one or more of the following sources:
  - (A) Solar photovoltaic and solar thermal energy;
  - (B) Wind energy;
  - (C) Biomass energy, including landfill gas or biogas produced from organic matter, wastewater, anaerobic digesters, or municipal solid waste;
  - (D) Hydroelectric, geothermal, hydrokinetic energy or ocean thermal energy; and,
  - (E) Other sources as may be approved by the Regulatory Commission of Alaska that generally have similar environmental impacts.

- d. Be operated and either owned or leased by the consumer, and
  - (A) Have a total nameplate capacity of no more than 25 kilowatts per consumer premises;
  - (B) Be located on the consumer premises;
  - (C) Be used primarily to offset part or all of the consumer's requirements for electric energy; and
  - (D) Include an inverter adequate to ensure the generated power is compatible with the Chugach system.

6) Chugach reserves the right to refuse net metering service to a customer if interconnection causes the total nameplate capacity of all eligible consumer generation systems participating in net metering to exceed 5.0 percent of Chugach's average retail demand.

7) Chugach will not terminate net metering service to any customer in the event Chugach's average retail demand decreases such that the nameplate capacity of existing net metered customers exceeds 5.0 percent of Chugach's average retail demand.

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**NET METERING SERVICE (CONTINUED)**

(Applicable to Eligible On-Site Generation Systems 25 kW or Less)

**Conditions (Continued)**

- 8) Chugach may request by tariff advice letter to adjust the limit on total nameplate capacity of eligible consumer generation systems participating in the net metering program above 5.0 percent of the electric utility's average retail demand.
- 9) Chugach reserves the right to limit net metering installations in portions of its distribution system that are reasonably necessary to address system stability constraints or other operational issues. Chugach shall notify the Commission no later than 30 days after refusal to interconnect with a consumer requesting net metering service.
- 10) Chugach may require the installation of additional metering equipment for net metering consumers, including the metering of individual generating facilities. For these installations, Chugach is responsible for all costs related to the purchase, installation, and maintenance of the additional metering equipment and the customer shall not be assessed any recurring charges for the additional metering equipment.
- 11) Chugach expects net metering customers to acquire liability insurance to cover any damages caused to the Chugach system by the consumer generation system, if that coverage is available at a reasonable cost to the consumer.
- 12) Pursuant to 3 AAC 50.910 (d), below is a summary of Chugach's average retail demand, maximum allowed nameplate capacity of eligible net metered generation facilities on the system, and total nameplate capacity of net metered customers:
  - a. Average retail demand (calendar year 2023): 215,877.65 kW R
  - b. Maximum allowed net metered nameplate capacity (5.0% of (a)): 10,793.88 kW R
  - c. System net metered generation capacity: 4,624.59 kW I

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Chugach Electric Association, Inc.

11. DEFINITIONS

11.1 Applicability of Definitions.

The definitions in this rule are applicable to the terms as used anywhere within this tariff unless the context in which the terms is used clearly indicates another or different definition should be applied.

11.2 Access, Accessible.

Access means capability of being reached quickly for operating, reading, repairing, removing, testing, inspecting, or installing meters, transformers, switches, conductors, electrical enclosures, and related equipment without requiring those for whom access is required to climb over or remove obstacles, to unlock doors, to dismantle fences or gates, and so forth. Accessible equipment is not guarded by architectural enhancements, dogs, elevation, locks, parked vehicles, structures, or other impediments.

11.3 Central Business District.

“Central Business District” means the area bounded by Second Avenue, Ninth Avenue, L Street and Gambell Street.

11.4 Chugach.

“Chugach” means Chugach Electric Association, Inc. When the term is used in the context of the exercise of discretion or authority relating to engineering or service decisions, “Chugach” means the utility manager or his authorized designee. When the term “Chugach” is used in relation to billings, deposits, credit and applications for service, it means the Utility Customer Service Section of Chugach Electric Association, Inc.

11.5 City.

“City” means the City of Anchorage.

11.6 Class of Service.

“Class of Service” means the type of service rendered by Chugach to a customer under a particular rate schedule.

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Sheet No. 58



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Chugach Electric Association, Inc.

11.7 Cost.

“Cost” means the total cost to Chugach to construct and install a facility or provide a service, including administrative and material overhead and all payroll costs.

11.8 Delivery Point.

“Delivery Point” means the point at which the customer accepts delivery of electricity, and is normally located where the customer’s service equipment and the Chugach system are connected.

11.9 Demand.

“Demand” means the average rate of energy use for an interval of fifteen (15) minutes, measured in kilowatts (kw).

11.10 Eligible Customer Generation System.

“Eligible Customer Generation System” means a generation system operated and either owned or leased by customer that complies with requirements of 3 AAC 50.920 and therefore is eligible for interconnection under the net metering provisions of this tariff.

11.11 Energy

“Energy” means electrical energy measured in kilowatt hours (kwh).

11.12 Ganged Service Equipment.

“Ganged Service Equipment” means an assembly of two or more individual service equipment with their line sides connected to a common bus.

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Chugach Electric Association, Inc.

11.13 Net Metered Generation.

“Net Metered Generation” means an eligible customer generation system or systems that are interconnected with and operate in parallel with the utility’s system in accordance with net metering provisions of this tariff.

11.14 Peak demand.

“Peak demand” means the maximum rate of energy use, measured in kilowatts.

11.15 Premise.

“Premise” means the real property of the customer in a single location being served by Chugach.

11.16 Primary Service.

“Primary Service” means the conductors and equipment necessary to supply the customer with electricity at the available primary voltages of 2400; 4160; 7200; 12,470 or 34,500 volts.

11.17 Raceway.

“Raceway” means a channel for holding wires, cables, or busbars, which is designed expressly and used solely for that purpose.

11.18 Salvage Value.

“Salvage Value” means the value of retired facilities and equipment as estimated by Chugach.

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Chugach Electric Association, Inc.

11.19 Secondary Service.

“Secondary Service” means service at available voltage of less than 2,400 volts.

11.20 Service Conductors.

“Service Conductors” means the supply conductors which extend from the street main or from transformers to the service equipment on the premises being supplied with service.

11.21 Service Equipment.

“Service Equipment” means the necessary equipment to control and meter the electric energy furnished by Chugach at its point of delivery to the customer.

11.22 Single Family Dwelling.

“Single Family Dwelling” means a building or portion of a building designed or used primarily for occupancy by not more than one family for living and sleeping purposes.

11.23 Tariff.

“Tariff” means the rate schedules, rules and regulations and other documents filed as a tariff with the Regulatory Commission of Alaska.

11.24 Temporary Service.

“Temporary Service” means service provided on an interim basis during a construction phase or any other service provided by use of facilities which cannot be reused or continued as permanent facilities and must be removed when the temporary need has ceased. The duration of the service will not be considered as a controlling factor in the determination of whether a service is temporary in nature.

RCA No. 121

1<sup>st</sup> Revision

Sheet No. 61



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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SPECIAL CONTRACT TO WHICH CHUGACH IS A PARTY  
3 AAC 48.380(26)

THE FOLLOWING IS A LISTING PURSUANT TO 3 AAC 48.370(26), OF ALL SPECIAL CONTRACTS ASSIGNED TO CHUGACH AND TO WHICH CHUGACH IS A PARTY:

1. Agreement Between the United States Army and the Municipality of Anchorage d/b/a Municipal Light and Power for Interruptible Service dated December 2, 1981.
  2. Agreement Between the United States Air Force and the Municipality of Anchorage d/b/a Municipal Light & Power for Interruptible Service dated October 27, 1981.
  3. Agreement Between Anchorage Sand & Gravel Co., Inc. and the Municipality of Anchorage d/b/a Municipal Light & Power for Interruptible Power Service dated April 26, 1999.
  4. Agreement Between the Anchorage School District and the Municipality of Anchorage d/b/a Municipal Light & Power for Interconnection and Operation of Standby Generators dated February 3, 2006.
  5. Agreement for the Sale and Purchase of Electric Power and Energy between Chugach Electric Association, Inc., and the City of Seward, effective May 31, 2006 through December 31, 2011; extended through December 31, 2021, with amendments one and two.
- 2022 Wholesale Power Contract between Chugach Electric Association, Inc. and the City of Seward d/b/a Seward Electric System, effective January 1, 2022.

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RCA NO.: 121OriginalSheet No. 61.1Canceling  
\_\_\_\_\_Sheet No. 61.1**INFORMATIONAL  
FILING ONLY****RECEIVED 07/28/21**

Chugach Electric Association, Inc.

**SCHEDULE OF NATURAL GAS TRANSACTION CONFIRMATIONS**

N

**Gas Sale and Purchase Agreement between Furie Alaska, LLC and Chugach Electric Association, Inc.**

- 1) Agreement between Chugach and Furie Alaska, LLC allows for interruptible natural gas purchases by Chugach from Furie Alaska, LLC from January 1, 2017 through March 31, 2033 at a price to be determined at the time of sale.

Confirmation Number	Start Date	End Date	Maximum Volume	\$/Mcf
1	May 1, 2017	September 30, 2017	500,000	\$6.45
1	March 12, 2018	March 31, 2018	50,000	\$6.30
1	September 4, 2019	September 30, 2019	38,000	\$6.55
2	September 18, 2019	September 30, 2019	38,000	\$6.55
3	October 1, 2019	October 15, 2019	15,000	\$6.55
4	October 12, 2019	October 31, 2019	20,000	\$6.55
5	May 1, 2020	May 15, 2020	20,000	\$6.85
6	May 16, 2020	May 31, 2020	20,000	\$6.85
7	June 1, 2020	June 15, 2020	20,000	\$6.85
8	June 16, 2020	June 30, 2020	20,000	\$6.85
9	October 1, 2020	October 31, 2020	60,000	\$7.20
10	November 1, 2020	November 15, 2020	60,000	\$7.20
11	November 16, 2020	November 30, 2020	45,000	\$7.20
12	December 1, 2020	December 15, 2020	50,000	\$7.40
13	December 16, 2020	December 31, 2020	50,000	\$7.40
14	January 1, 2021	January 31, 2021	100,000	\$7.40
15	February 1, 2021	February 28, 2021	100,000	\$7.40
16	March 1, 2021	March 31, 2021	100,000	\$7.40
17	March 16, 2021	September 30, 2021	400,000	\$7.47
18	May 8, 2021	May 31, 2021	160,000	\$7.47
19	June 5, 2021	July 31, 2021	390,000	\$7.47

N

Tariff Advice No. 387-121

Issued by:

Effective: July 28, 2021

Chugach Electric Association, Inc

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA NO.: 121

Original

Sheet No. 61.2



Canceling

Sheet No. 61.2

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Chugach Electric Association, Inc.

**SCHEDULE OF NATURAL GAS TRANSACTION CONFIRMATIONS (Continued)**

N

**Gas Sale and Purchase Agreement between Furie Alaska, LLC and Chugach Electric Association, Inc.**

1) Agreement between Chugach and Furie Alaska, LLC allows for interruptible natural gas purchases by Chugach from Furie Alaska, LLC from July 1, 2021 through March 31, 2023 at a price to be determined at the time of sale.

Confirmation Number	Start Date	End Date	Maximum Volume	\$/Mcf
1	November 19, 2021	December 31, 2021	301,000	\$7.85
2	January 1, 2022	January 31, 2022	217,000	\$7.85
3	February 1, 2022	February 28, 2022	196,000	\$7.85
4	March 1, 2022	March 31 2022	310,000	\$7.85
5	April 1, 2022	April 30, 2022	360,000	\$7.95
6	May 1, 2022	September 30, 2022	800,000	\$8.15

N

Tariff Advice No. 403-121

Issued by:  
Chugach Electric Association, Inc  
P.O. Box 196300 Anchorage, Alaska 99519-6300

Effective: **June 8, 2022**

RCA NO.: 121      1<sup>st</sup> Revision      Sheet No. 62



Canceling  
Original      Sheet No. 62

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**SCHEDULE OF CHARGES, FEES AND CREDITS**

		T
<b><u>Member Services Fees and Credits</u></b>		D, N
1. Membership Fee.....	\$5.00	N
2. Meter Deposits for Residential, Small and Large General Service (not to exceed two times the estimated monthly bill).....	Varies	T
3. Connect Fee, Reconnect of Delinquent Account, New Services, or Transfers of Service		D, N
a) During Office Hours.....	\$15.00	D, N
b) Outside Office Hours.....	\$50.00	D, N
c) Call-Out Connect.....	\$363.00	D, N, I
4. Late Payment Fee		N
a) Large General Service (plus a finance charge of 0.875% on past due amount).....	\$3.00	T, I
b) All Other Retail Classes.....	\$3.00	T, I
5. Non-Sufficient Fund Balance Fee.....	\$25.00	D
6. Meter Tampering and/or Unauthorized Breaking of Meter Seal.....	\$200.00	T
7. Meter Test Fee		N
a) Residential/Small Commercial.....	\$50.00	N
b) Large Commercial.....	\$75.00	N
8. Electric Equipment Investigation Fee.....	\$100.00	N
9. Billing credit for the annual prepayment of electric bill (credit applied annually).....	\$25.00	N
10. Billing credit (one-time) for transition to paperless (email billing).....	\$5.00	N
11. Charges for materials and services that have not been specifically provided in this tariff will be made at cost.		T

RCA No. 121

1st Revision

Sheet No. 62.1



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**MAR 31 2023**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**SCHEDULE OF CHARGES AND FEES (Continued)**

**Distribution Services Fees**

**A. Raising or Lowering of Facilities**

- 1. Secondary Pedestal ..... \$1,075.00 I
- 2. Single Phase Padmounted Transformer ..... \$2,575.00 I
- 3. Three Phase Padmounted Transformer ..... Chugach Cost <sup>1</sup>
- 4. Single Phase Junction Cabinet ..... Chugach Cost <sup>1</sup>
- 5. Three Phase Junction Cabinet ..... Chugach Cost <sup>1</sup>
- 6. Switching Cabinet ..... Chugach Cost <sup>1</sup>
- 7. Metal Street Light ..... \$1,290.00 I
- 8. Primary and Secondary Cable ..... Chugach Cost <sup>1</sup>

**B. Special Service Installations**

- 1. Secondary Service Inspections (New or Upgrade Service)
  - a) Initial Inspection ..... No Charge
  - b) Per Inspection Charge, Other Than Initial Inspection ..... \$190.00 I

<sup>1</sup> Refer to Section 8.14, "Modification to Existing Facilities".



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Chugach Electric Association, Inc.

**SCHEDULE OF CHARGES AND FEES (Continued)**

**B. Special Service Installations (Continued)**

- 2. New Underground Residential Service, Over 100 Ft.  
(applies to direct burial installation only)
  - Single Use Trench - Chugach Only
    - a) Installation Without Temporary Corflo Placement.....\$14.90/Ft.      I
    - b) Installation Requiring Temporary Corflo Placement.....\$20.50/Ft.      I
  - Joint Use Trench – Two Party Installations <sup>1</sup>
    - c) Installation Without Temporary Corflo Placement.....\$13.70/Ft.      I
    - d) Installation Requiring Temporary Corflo Placement.....\$19.30/Ft.      I
  - Joint Use Trench – Three Party Installations <sup>1</sup>
    - e) Installation Without Temporary Corflo Placement.....\$13.40/Ft.      I
    - f) Installation Requiring Temporary Corflo Placement.....\$19.00/Ft.      I
- 3. New Overhead Residential Service, Over 100 Ft.....\$5.30/Ft.      I
- 4. Residential Service Conversion, Overhead to Underground <sup>2</sup>  
(applies to direct burial installation only)
  - a) Conductor and Trenching .....\$14.90/Ft.      I
  - b) Service Disconnect / Reconnect ..... \$560.00      I
  - c) Secondary Riser, if Required ..... \$1,685.00      I
- 5. Relocate Residential Overhead Service Attachment <sup>2</sup> ..... \$560.00      I
- 6. Residential Service Pole ..... \$1,435.00      I
- 7. Guard Post for Padmounted Transformer or Switch Cabinet ..... \$1,240.00      I
- 8. Down Guy Relocation, per Anchor ..... \$1,475.00      I

**C. Non-Utility Generation Interconnection Application Fee (Class A & B)**

- 1. Non-Utility Generation Interconnection Application Fee, per Application..... \$220.00

<sup>1</sup> Available only when contributions are made from joint use party.

<sup>2</sup> If a residential service is being upgraded in conjunction with the service work and must be replaced, the service replacement cost will be discounted at 50% but the discount shall not exceed \$1,550 (the value of the single-family residential distribution line extension credit).

RCA No. 121

1<sup>st</sup> Revision

Sheet No. 63



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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTOR**

D, N

**A. Applicability of Cost of Power Adjustment Factor**

Retail and wholesale base rate schedules shall be subject to adjustment by the applicable Cost of Power Adjustment Factor set forth on Tariff Sheet Nos. 66 through 70. In accordance with these sheets, billings to customers will be adjusted to reflect changes in fuel and purchased power expense levels.

**B. Cost of Power Adjustment Balance Account**

Chugach shall maintain a Cost of Power Adjustment Balance Account (FERC Account No. 186 – Misc. Deferred Debits) commencing with a zero balance on October 26, 1982. Separate balancing accounts for the retail class and each wholesale customer (excluding interchange sales) shall be maintained in a manner that reflects allocated shares of fuel and purchased power costs and revenues by class. The Cost of Power Adjustment Balance Account balances shall reflect the sum of the debit and credit entries described as follows:

- (1) Debit entries equal to the fuel and purchased power costs allocated to retail and each wholesale customer (excluding interchange sales) for each preceding month. This includes:
  - (i) The actual cost of fuel and power purchased during the month for use in firm power sales;
  - (ii) The actual cost of natural gas compression and related delivery services;
  - (iii) The cost of fuel withdrawn from storage (FERC Account No. 151 – Fuel Stock) calculated by multiplying the total units of fuel withdrawn from storage by the weighted average cost of fuel;
  - (iv) Storage reservation, capacity and withdrawal fees; and,
  - (v) Fuel transportation fees for fuel purchased, or transported from storage, during the month for system use.
- (2) Credit entries equal to the kWh sold to retail and each wholesale customer (excluding interchange sales) during that month multiplied by the corresponding fuel and purchased power cost adjustment factor charged in that month.
- (3) Adjustments to debit or credit entries described in (1) and (2) above for prior periods.

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTOR (cont.)**

D, N

**C. Fuel in Storage Account**

Chugach shall maintain a Fuel in Storage account (FERC Account No. 151 – Fuel Stock), commencing with a zero balance on March 31, 2012 and balances thereafter reflecting the sum of the debit and credit entries described as follows:

- (1) Debit entries equal to:
  - (i) The cost of fuel purchased and injected into storage;
  - (ii) Transportation fees incurred for fuel transported to storage;
  - (iii) The cost of fuel provided to the storage facility for injection operations;
  - (iv) Storage injection fees;
- (2) Credit entries equal to the cost of fuel withdrawn from storage calculated by multiplying the total units of fuel withdrawn from storage by the weighted average cost of fuel.
- (3) Debit or credit entries for adjustments for entries described in (1) and (2) above for prior periods.

**D. CINGSA Storage Recovery Definitions**

The following definitions apply to the fuel storage and related costs incurred under the Firm Storage Services Agreement (FSS Agreement) and Interruptible Storage Service (ISS Agreement) between Chugach and Cook Inlet Natural Gas Storage Alaska, LLC (CINGSA) that are recovered through Chugach's fuel and purchased power cost adjustment factor.

- (1) Cost of Fuel in Storage is the total cost of the fuel in storage, including (1) the actual cost of the fuel purchased, (2) fees for transportation to storage, (3) lost and unaccounted for/storage fuel reimbursement, (4) fees for injection. This is recorded in the Fuel Stock Account 151 (Fuel in Storage).
- (2) Weighted Average Cost of Fuel, or WACF, is calculated using (A) Chugach's total Cost of Gas in Storage at the end of the preceding month, divided by (B) Chugach's total quantity of Gas in storage at the end of the preceding month (Mcf). The results are in dollars per Mcf. [A / B = WACF] Once per month, Chugach applies the Weighted Average Cost of Fuel, or WACF, to the total quantity of Mcf withdrawn during the month.

The following definitions apply to the cost element line item, CINGSA – FSS, ISS, and Gas Withdrawn listed on Tariff Sheet No. 66:

- (3) Gas Withdrawn is calculated using the Weighted Average Cost of Fuel (WACF) multiplied by the total number of units (Mcf) withdrawn.
- (4) Fuel Storage costs consist of the charges for reservation, capacity and withdrawal in accordance with the Firm Fuel Storage (FSS) Agreement, Interruptible Storage Service (ISS) Agreement, and the CINGSA tariff.
- (5) Fuel Transportation consists of all costs related to the transporting of fuel purchased, or transported from storage, for use.

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RCA No. 121

1<sup>st</sup> Revision

Sheet No. 65



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STATE OF ALASKA  
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Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTOR (cont.)**

D, N

E. Revision of Retail and Wholesale Cost of Power Adjustment Factors

- (1) By the first day of each quarter, Chugach shall file supporting information by Tariff Advice letter to evidence the development of the retail and wholesale cost of power adjustment balances and the development of the average fuel and purchased power costs per kWh sold for the ensuing quarter. Supporting information to be filed includes:
  - (i) Calculation of the Cost of Power Adjustment Factor as detailed in Tariff Sheet Nos. 66 through 70.
  - (ii) A schedule calculating the average retail line loss for the 12 months ending with the prior quarter.
  - (iii) A schedule identifying projected energy (kWh) sales in the next quarter.
  - (iv) A schedule of energy (kWh) generated per generating unit per month and the quantity of power purchased per month for the 12 months ending with the prior quarter.
  - (v) A schedule identifying projected energy (kWh) generated and purchased in the next quarter.
  - (vi) A schedule of the quantity of fuel used per generating unit for the 12 months ending with the prior quarter. Quantity data will be provided to the highest degree of detail available.
  - (vii) Invoices and/or other documentation to substantiate the fuel and purchased power costs of the prior quarter.
  - (viii) A schedule of the monthly Fuel in Storage account balance with the calculation of weighted average unit cost for the prior quarter, identifying transactions associated with the FSS Agreement, the ISS Agreement and gas exchanges.
  - (ix) Invoices and/or other documentation to substantiate activity and balances in the Fuel in Storage account during the prior quarter.
- (2) Exchange Service: The charge for gas exchange transactions shall be determined on a case by case basis as agreed between Chugach and the buyer but in no event shall buyer pay less than the variable costs associated with the transaction. If gas storage service is used, buyer shall pay applicable transportation, injection/withdrawal and storage use fees. Revenues from storage use fees shall be credited as an offset against CINGSA capacity costs.
- (3) Unless sooner authorized by the Commission, the retail and wholesale Cost of Power Adjustment Factors will be effective subject to subsequent review and approval or adjustment by the Commission, for all billing subsequent to the revision date. Revision dates will coincide with the beginning of a monthly billing cycle.

D, N

RCA NO.: 12116<sup>th</sup> RevisionSheet No. 66

Canceling

15<sup>th</sup> RevisionSheet No. 66**RECEIVED****APR 22 2024**STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTORS AT G&T POST ACQUISITION**

e.1. Fuel Adjustment Factor: Predicted Costs for the quarter beginning April 1, 2024

	Total	Retail	Seward
<b>Natural Gas Fuel Expense by Contract</b>			
AIX Energy, LLC (4/2016-3/2024)	\$0	\$0	\$0
BRU	\$14,869,065	\$14,387,452	\$481,613
Cook Inlet Energy (2014-3/2023)	\$0	\$0	\$0
Furie (11/2021-3/2023)	\$0	\$0	\$0
Hilcorp Alaska, LLC-Firm (1/2015-3/2028)	\$5,238,198	\$5,068,532	\$169,667
Hilcorp Alaska, LLC-Non-Firm (2/2021-8/2021)	\$0	\$0	\$0
<b>Other Fuel Expenses</b>			
Emergency Generator and Other Misc. Fuel	\$0	\$0	\$0
CINGSA - FSS, ISS and Fees	\$1,038,598	\$1,004,957	\$33,640
CINGSA - Gas Withdrawn	\$0	\$0	\$0
Gas Transportation and Compression	\$1,564,834	\$1,514,149	\$50,685
	<b>\$22,710,695</b>	<b>\$21,975,090</b>	<b>\$735,605</b>
<b>Less Credits</b>			
Economy Sales: Fuel and Margins	(\$889,133)	(\$860,334)	(\$28,799)
Wheeling Revenue	(\$588,275)	(\$569,220)	(\$19,054)
AWWU Water Sales	(\$210,194)	(\$203,386)	(\$6,808)
Pooling Agreement - MEA	(\$555,542)	(\$537,548)	(\$17,994)
Gas Exchange Revenue	(\$138,000)	(\$133,530)	(\$4,470)
Subtotal	(\$2,381,143)	(\$2,304,017)	(\$77,126)
Net Fuel Expense	\$20,329,551	\$19,671,072	\$658,479
Generation & Purchases (MWh)	473,019	458,076	14,943
Cost per MWh at Generation	\$42.98	\$42.94	\$44.06
Projected Balances as of March 30, 2024	(\$5,142,604)	(\$4,982,922)	(\$159,682)
Fuel Expense to be Recovered at G&T	\$15,186,947	\$14,688,150	\$498,797
Predicted Sales at G&T (MWh)	465,039	450,348	14,691
Fuel Adjustment Factor per kWh at G&T	<b>\$0.03266</b>	<b>\$0.03262</b>	<b>\$0.03395</b> I, I, I

Tariff Advice No. 432-121

Issued by:

Effective: April 1, 2024

**Pursuant to U-24-009(3)**

Chugach Electric Association, Inc

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA NO.: 12114<sup>th</sup> RevisionSheet No. 67

Canceling

13<sup>th</sup> RevisionSheet No. 67**RECEIVED****APR 22 2024**STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTORS AT G&T  
POST ACQUISITION (CONTINUED)**

e.2. Purchased Power Adj. Factor: Predicted costs for the quarter beginning April 1, 2024

Description	Total	Retail	Seward
Purchased Power Expense			
Bradley Lake Purchases	\$3,625,446	\$3,508,017	\$117,429
Base FIW Renewable Resource Cost	\$1,131,408	\$1,131,408	\$0
Non-Utility Generation	\$0	\$0	\$0
Pooling Agreement - MEA	\$627,226	\$606,910	\$20,316
Other Purchases	\$117,929	\$114,110	\$3,820
Subtotal	\$5,502,009	\$5,360,444	\$141,565
Less Purchased Power Credits			
Renewable Energy Certificates	\$0	\$0	\$0
Wheeling and Economy Revenue	(\$357,924)	(\$346,331)	(\$11,593)
Subtotal	(\$357,924)	(\$346,331)	(\$11,593)
Net Purchased Power Expense	\$5,144,085	\$5,014,113	\$129,972
Generation & Purchases (MWh)	473,019	458,076	14,943
Cost per MWh at Generation	\$10.88	\$10.95	\$8.70
Projected Balances as of March 30, 2024	\$3,039,948	\$2,872,860	\$167,089
Purchased Power Expense to be Recovered	\$8,184,033	\$7,886,973	\$297,060
Predicted Sales at G&T (MWh)	465,039	450,348	14,691
Purchased Power Adjustment Factor per kWh at G&T	\$0.01760	\$0.01751	\$0.02022 R, R, I

Tariff Advice No. 432-121  
Pursuant to U-24-009(3)Issued by:  
Chugach Electric Association, Inc

Effective: April 1, 2024

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA NO.: 12114<sup>th</sup> RevisionSheet No. 68

Canceling

13<sup>th</sup> RevisionSheet No. 68**RECEIVED****APR 22 2024**STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTORS AT G&T  
POST ACQUISITION (CONTINUED)**

## e.3. Incremental Fire Island Wind Adjustment Factor:

Predicted costs for the quarter beginning April 1, 2024

Description	Total	Retail	Seward	
Predicted FIW Purchases (MWh)	11,664	11,664	----	
Purchased Power Rate	\$97.00	\$97.00	----	
Total FIW Purchased Power Cost	\$1,131,408	\$1,131,408	----	
Chugach Avoided Energy Cost at G&T (MWh)	\$59.28	\$59.28	----	
Estimated Cost Avoided Due to FIW Purchases	\$691,475	\$691,475	----	
Fire Island Wind Cost Differential	\$439,933	\$439,933	----	
Chugach Retail Generation & Purchases (MWh)	458,076	458,076	----	
Cost per MWh at Generation	\$0.96	\$0.96	----	
Predicted Sales at G&T (MWh)	450,348	450,348	----	
FIW Adjustment Factor per kWh at G&T	\$0.00098	\$0.00098	----	R, R

## e.4. Summary of fuel and purchased power cost adjustment factors at G&amp;T

for rates effective April 1, 2024

Fuel & Purch. Pwr Costs to be Recovered	\$25,913,569	\$25,125,119	\$788,451	
Generation & Purchases (MWh)	473,019	458,076	14,943	
Cost per MWh at Generation	\$54.78	\$54.85	\$52.76	
Projected Balances as of March 30, 2024	(\$2,102,656)	(\$2,110,063)	\$7,407	
Total Costs Recovered at G&T	\$23,810,913	\$23,015,056	\$795,857	
Predicted Sales at G&T (MWh)	465,039	450,348	14,691	
Fuel and Purchased Power Adjustment				
Factor per kWh at G&T	\$0.05120	\$0.05111	\$0.05417	I, I, I

Tariff Advice No. 432-121  
Pursuant to U-24-009(3)Issued by:  
Chugach Electric Association, Inc.  
P.O. Box 196300 Anchorage, Alaska 99519-6300

Effective: April 1, 2024

RCA NO.: 121      14<sup>th</sup> Revision      Sheet No. 69



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13<sup>th</sup> Revision      Sheet No. 69

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTORS**  
**POST ACQUISITION AT RETAIL DELIVERY: PRIMARY SERVICE**

e.5. Chugach retail cost of power adjustment factors for rates effective April 1, 2024

1. Total Chugach Retail Fuel and Purchased Power Cost Recovery		\$23,015,056	
2. Retail Fuel Adjustment Factor per kWh at G&T		\$0.03262	
3. Retail Purchased Power Adjustment Factor per kWh at G&T		\$0.01751	
4. Fire Island Wind Adjustment Factor per kWh at G&T		\$0.00098	
5. Chugach Retail Service at Primary Voltage			
A. Fuel Adjustment Factor			
a) Primary kWh Sales at G&T	63,278,559		
b) Fuel Cost Recovery - Primary Voltage	\$2,064,147		
c) Primary kWh Sales at Delivery	62,208,923		
d) Fuel Adjustment Factor per kWh at Primary		<u>\$0.03318</u>	I
(Percent Primary Distribution Losses at G&T: 1.69%)			
B. Purchased Power Adjustment Factor			
a) Primary kWh Sales at G&T	63,278,559		
b) Purchased Power Cost Recovery - Primary Voltage	\$1,108,008		
c) Primary kWh Sales at Delivery	62,208,923		
d) Purchased Power Adj. Factor per kWh at Primary		<u>\$0.01781</u>	R
C. Fire Island Wind Renewable Energy Adjustment Factor			
a) Primary kWh Sales at G&T	63,278,559		
b) FIW Cost Differential - Primary Voltage	\$62,013		
c) Primary kWh Sales at Delivery	62,208,923		
d) FIW Renewable Energy Adj. Factor per kWh at Primary		<u>\$0.00100</u>	R
D. Total Retail Service at Primary Voltage Delivery		\$0.05199	I

Tariff Advice No. 432-121  
**Pursuant to U-24-009(3)**

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P.O. Box 196300 Anchorage, Alaska 99519-6300

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Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTORS**  
**POST ACQUISITION AT RETAIL DELIVERY: SECONDARY SERVICE**

e.6. Chugach retail cost of power adjustment factors for rates effective April 1, 2024

6. Chugach Retail Service at Secondary Voltage

A. Fuel Adjustment Factor

a) Secondary kWh Sales at G&T	387,069,234		
b) Fuel Cost Recovery - Secondary Voltage	\$12,626,198		
c) Secondary kWh Sales at Delivery	377,692,170		
d) Fuel Adjustment Factor per kWh at Secondary		<u>\$0.03343</u>	I
(Percent Secondary Distribution Losses at G&T: 2.42%)			

B. Purchased Power Adjustment Factor

a) Predicted Secondary kWh Sales at G&T	387,069,234		
b) Purchased Power Cost Recovery - Secondary Voltage	\$6,777,582		
c) Predicted Secondary kWh Sales at Delivery	377,692,170		
d) Purchased Power Adj. Factor per kWh at Secondary		<u>\$0.01794</u>	R

C. Fire Island Wind Renewable Energy Adjustment Factor

a) Predicted Secondary kWh Sales at G&T	387,069,234		
b) FIW Cost Differential - Secondary Voltage	\$379,328		
c) Predicted Secondary kWh Sales at Delivery	377,692,170		
d) FIW Renewable Energy Adj. Factor per kWh at Secondary		<u>\$0.00100</u>	R

D. Total Retail Service at Secondary Voltage Delivery      \$0.05237      I

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12<sup>th</sup> Revision

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Chugach Electric Association, Inc.

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Tariff Advice No. 426-121

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Chugach Electric Association, Inc.  
P.O. Box 196300 Anchorage, Alaska 99519-6300

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14<sup>th</sup> Revision

Sheet No. 72



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**MAR 29 2024**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

**Chugach Electric Association, Inc.**

**Beluga River Unit Contributed Capital Surcharge and Rebate**

The Beluga River Unit Contributed Capital (BRU Contributed Capital) adjustment process governs the collection of funds through a surcharge assessed to South District members and the disbursement of funds to North District members through a rebate over a targeted 120-month period, beginning January 1, 2021.<sup>1</sup> The BRU Contributed Capital adjustment mechanism reconciles historical contributions and future ratepayer benefit between members served in the South District and North District in the amount of \$176,612,912, or \$136,002,239 on a present value basis (10 years, 5% interest rate).

BRU Contributed Capital surcharge and rebate amounts are adjusted quarterly consistent with the timing of Chugach's cost of power adjustment filings. Because the surcharge and rebate amounts are determined by projected sales and incorporate balancing accounts, the actual life of the BRU Contributed Capital adjustment process may be shorter or longer than the 120-month period.

**A. Applicability**

The surcharge is applicable to all South District members and the rebate is applicable to all North District members.

**B. BRU Contributed Capital Balancing Accounts**

Chugach shall maintain a BRU Contributed Capital surcharge balancing account for South District members and a BRU Contributed Capital rebate balancing account for North District members. The South District balancing account starts with a debit balance of \$176,612,912 reflecting the amounts due from the South District members. The North District balancing account starts with a credit balance of \$176,612,912 reflecting the amount to be rebated. Each account will be reduced monthly by the amount of the surcharge collected and rebate returned to the members.

**C. Surcharge and Rebate Amounts**

Member billings will be adjusted on a quarterly basis to reflect changes in surcharge and rebate amounts.

South District BRU Contributed Capital Surcharge:	\$0.01918	per kWh	I
North District BRU Contributed Capital Rebate:	(\$0.01499)	per kWh	I

<sup>1</sup> See Order No. U-18-102(44)/U-19-020(39)/U-19-021(39) issued by the Regulatory Commission of Alaska on May 28, 2020.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTORS POST ACQUISITION  
WITH BRU CONTRIBUTED CAPITAL AND RRR REBATE ADJUSTMENTS**

	<u>South District</u>		<u>North District</u>		
	Primary	Secondary	Primary	Secondary	
Fuel Rate	\$0.03318	\$0.03343	\$0.03318	\$0.03343	I, I, I, I
Purchased Power Rate	\$0.01781	\$0.01794	\$0.01781	\$0.01794	R, R, R, R
FIW Adj Factor	\$0.00100	\$0.00100	\$0.00100	\$0.00100	R, R, R, R
Subtotal	<u>\$0.05199</u>	<u>\$0.05237</u>	<u>\$0.05199</u>	<u>\$0.05237</u>	I, I, I, I
BRU Contributed Capital	\$0.01918	\$0.01918	(\$0.01499)	(\$0.01499)	I, I, I, I
Total per kWh Rate	<u>\$0.07117</u>	<u>\$0.07155</u>	<u>\$0.03700</u>	<u>\$0.03738</u>	I, I, I, I

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Issued by:

Effective: April 1, 2024

**Pursuant to U-24-009(3)**

Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA No. 121

3<sup>rd</sup> Revision

Sheet No. 73.1



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Sheet No. 73.1

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**TRANSFER PRICE OF CHUGACH ELECTRIC ASSOCIATION, INC.  
NATURAL GAS PRODUCED FROM THE BELUGA RIVER UNIT**

<u>Effective Date</u>	<u>Price (\$/Mcf)</u>	
October 30, 2020	\$2.89	
January 1, 2021	\$2.73	
April 1, 2021	\$3.39	
October 1, 2021	\$3.58	
March 4, 2022	\$3.60	
April 1, 2022	\$2.90	
May 13, 2022	\$3.64	
October 1, 2022	\$4.50	N

RCA NO.: 121      2nd Revision      Sheet No. 73.2



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1st Revision      Sheet No. 73.2

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**TRANSFER PRICE OF CHUGACH ELECTRIC ASSOCIATION, INC.  
NATURAL GAS PRODUCED FROM THE BELUGA RIVER UNIT**

<u>Effective Date</u>	<u>Total</u>	<u>Field Operations</u>	<u>ARO Surcharge</u>	<u>Capital Reserve Surcharge</u>	
<b>Post Acquisition:</b>					
January 1, 2021	\$2.73	\$2.63	\$0.10	---	
April 1, 2021	\$3.39	\$3.28	\$0.11	---	
October 1, 2021	\$3.58	\$3.48	\$0.10	---	
March 4, 2022	\$3.60	\$3.48	\$0.12	---	
April 1, 2022	\$2.90	\$2.79	\$0.11	---	
May 13, 2022	\$3.64	\$2.79	\$0.11	\$0.74	
October 1, 2022	\$4.50	\$2.57	\$0.52	\$1.41	
April 1, 2023	\$4.81	\$2.35	\$0.54	\$1.92	
October 1, 2023	\$5.49	\$2.62	\$0.57	\$2.30	
April 1, 2024	\$6.45	\$3.43	\$0.53	\$2.49	N

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Issued by:

Effective: April 1, 2024

**Pursuant to U-24-009(1)** Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA NO.: 121      5<sup>th</sup> Revision      Sheet No. 74



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4<sup>th</sup> Revision      Sheet No. 74

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTOR HISTORY  
(SERVICE AT TRANSMISSION DELIVERY, RETAIL)**

For Rates Effective	Chugach Retail (Rate per kWh)			
	Total	Fuel	Purchased Power	FIW Adjustment Factor
<b>Post Acquisition:</b>				
January 1, 2021	\$0.04696	\$0.03936	\$0.00587	\$0.00173
April 1, 2021	\$0.04786	\$0.04214	\$0.00488	\$0.00084
July 1, 2021	\$0.04841	\$0.04284	\$0.00488	\$0.00069
October 1, 2021	\$0.04764	\$0.04192	\$0.00474	\$0.00098
January 1, 2022	\$0.03820	\$0.03229	\$0.00448	\$0.00143
April 1, 2022	\$0.04237	\$0.03639	\$0.00502	\$0.00096
July 1, 2022	\$0.04599	\$0.03800	\$0.00692	\$0.00107
October 1, 2022	\$0.04790	\$0.03968	\$0.00692	\$0.00130
January 1, 2023	\$0.04729	\$0.03785	\$0.00829	\$0.00115
April 1, 2023	\$0.05143	\$0.04102	\$0.00938	\$0.00103
July 1, 2023	\$0.05364	\$0.04201	\$0.01048	\$0.00115
October 1, 2023	\$0.05198	\$0.03862	\$0.01231	\$0.00105
January 1, 2024	\$0.05090	\$0.03129	\$0.01839	\$0.00122
April 1, 2024	\$0.05111	\$0.03262	\$0.01751	\$0.00098

N

Tariff Advice No. 432-121

Issued by:

Effective: April 1, 2024

**Pursuant to U-24-009(3)**

Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

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5<sup>th</sup> Revision

Sheet No. 75



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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTOR HISTORY  
(SERVICE AT CHUGACH RETAIL DELIVERY)**

For Rates Effective	Primary Voltage (Rate per kWh)				N
	Total	Fuel	Purchased Power	FIW Adjustment Factor	
<b>Post Acquisition:</b>					
January 1, 2021	\$0.04729	\$0.03964	\$0.00591	\$0.00174	
April 1, 2021	\$0.04944	\$0.04353	\$0.00504	\$0.00087	
July 1, 2021	\$0.04952	\$0.04382	\$0.00499	\$0.00071	
October 1, 2021	\$0.04963	\$0.04367	\$0.00494	\$0.00102	
January 1, 2022	\$0.04317	\$0.03649	\$0.00506	\$0.00162	
April 1, 2022	\$0.04325	\$0.03715	\$0.00512	\$0.00098	
July 1, 2022	\$0.04600	\$0.03801	\$0.00692	\$0.00107	
October 1, 2022	\$0.04823	\$0.03995	\$0.00697	\$0.00131	
January 1, 2023	\$0.04964	\$0.03973	\$0.00870	\$0.00131	
April 1, 2023	\$0.05342	\$0.04261	\$0.00974	\$0.00107	
July 1, 2023	\$0.05680	\$0.04448	\$0.01110	\$0.00122	
October 1, 2023	\$0.05320	\$0.03953	\$0.01260	\$0.00107	
January 1, 2024	\$0.05198	\$0.03195	\$0.01878	\$0.00125	
April 1, 2024	\$0.05199	\$0.03318	\$0.01781	\$0.00100	N

Tariff Advice No. 432-121

**Pursuant to U-24-009(3)**

Issued by:

Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

Effective: April 1, 2024

RCA NO.: 121      5<sup>th</sup> Revision      Sheet No. 76



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4<sup>th</sup> Revision      Sheet No. 76

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COST OF POWER ADJUSTMENT FACTOR HISTORY  
(SERVICE AT CHUGACH RETAIL SECONDARY VOLTAGE DELIVERY)**

For Rates Effective	Total	Secondary Voltage (Rate per kWh)			N
		Fuel	Purchased Power	FIW Adjustment Factor	
<b>Post Acquisition:</b>					
January 1, 2021	\$0.04766	\$0.03994	\$0.00596	\$0.00176	
April 1, 2021	\$0.04980	\$0.04385	\$0.00508	\$0.00087	
July 1, 2021	\$0.04989	\$0.04415	\$0.00503	\$0.00071	
October 1, 2021	\$0.05000	\$0.04400	\$0.00497	\$0.00103	
January 1, 2022	\$0.04349	\$0.03676	\$0.00510	\$0.00163	
April 1, 2022	\$0.04358	\$0.03743	\$0.00516	\$0.00099	
July 1, 2022	\$0.04634	\$0.03829	\$0.00697	\$0.00108	
October 1, 2022	\$0.04859	\$0.04025	\$0.00702	\$0.00132	
January 1, 2023	\$0.05001	\$0.04002	\$0.00877	\$0.00122	
April 1, 2023	\$0.05383	\$0.04293	\$0.00982	\$0.00108	
July 1, 2023	\$0.05722	\$0.04481	\$0.01118	\$0.00123	
October 1, 2023	\$0.05359	\$0.03982	\$0.01269	\$0.00108	
January 1, 2024	\$0.05236	\$0.03219	\$0.01892	\$0.00125	
April 1, 2024	\$0.05237	\$0.03343	\$0.01794	\$0.00100	N

Tariff Advice No. 432-121

Issued by:

Effective: April 1, 2024

**Pursuant to U-24-009(3)**

Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

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4th Revision

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3rd Revision

Sheet No. 77

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**JUN 28 2023**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

CHUGACH ELECTRIC ASSOCIATION, INC.

Regulatory Cost Charge

The Regulatory Cost Charge is a special surcharge applied to all regulated retail customer billings to pay the utility's share of the budget of the Commission.

Regulatory Cost Charge

\$0.001028 per kWh

1

Pursuant to U-23-009(2)

Effective July 1, 2023

Issued By: Chugach Electric Association, Inc.

By: Arthur Miller

Title: Chief Executive Officer

RCA No. 121

1<sup>st</sup> Revision

Sheet No. 77.1



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**FEB 27 2024**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

## ELECTRIC RELIABILITY ORGANIZATION SURCHARGE

The electric reliability organization (ERO) is a statutorily created entity that is responsible for developing and enforcing reliability standards and transmission interconnection standards as well as conducting integrated resource planning for the Railbelt electric system. The ERO recovers its costs associated with those activities from load serving entities (LSE) like Chugach that are located within an interconnected bulk-electric system served by the ERO. Any LSE that is subject to the ERO cost-recovery surcharge may also implement a separate charge on its bills to retail customers to recover costs it incurs through payment of the ERO's surcharge. This tariff sheet contains the terms, conditions, and charges associated with Chugach's recovery of the ERO related costs described above.

### A. Applicability

The ERO surcharge is applicable to Chugach Retail Members.

### B. ERO Surcharge Balance Account

Chugach shall maintain a balancing account to reflect its LSE share of allocated costs and the amounts recovered through the surcharge. The balancing account reflects the sum of the debit and credit entries described as follows:

- 1) A debit entry equal to the actual total ERO costs for each month of the prior year;
- 2) A credit equal to the surcharge collected from Members by the Association each month of the prior year;
- 3) Debit or credit entries for relevant adjustments and accrual/reversals for entries described in (1) and (2) above for prior period(s).

### C. ERO Surcharge

The surcharge rate will be adjusted annually to reflect changes in the cost allocation amount as adjusted by balancing account balances and divided by projected retail sales for the recovery period. Chugach reserves the right to revise the rate more frequently if necessary.

ERO Surcharge: \$0.00054 per kWh

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1<sup>st</sup> Revision

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 11  
RESIDENTIAL SERVICE

Applicable to:

Single-family dwellings, for domestic and household purposes.

Character of Service:

Single phase 60 Hertz alternating current at 120/240 volts or 120/208Y volts, 3-wire, as available.

Monthly Rate:

Customer Charge: \$13.62

Energy Charge: 16.120 cents per kWh

I

Minimum Monthly Charge:

The customer charge of \$13.62

Conditions:

This schedule may be applied to a home occupation conducted in the single-family dwelling by the family members if the demand and energy consumption created by the business is less than and incidental to the demand and energy consumption of the residential load.

Fuel and Purchased Power Cost Adjustment: The foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Numbers 68 and 70.

Tariff Advice No. 422-121

**Pursuant to U-23-047(1)/U-23-048(1)**

Issued by:

Effective:

September 1, 2023

Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA NO.: 121 1<sup>st</sup> Revision Sheet No. 79



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**JUL 03 2023**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 21  
GENERAL SERVICE – SMALL

Applicable to:

Any class of service which does not qualify for a residential rate schedule and where the demand does not exceed twenty (20) kilowatts (kW) for three consecutive months.

Character of Service:

Single or three-phase 60 Hertz alternating current at 120/240, 120/208Y, 208Y/120, 240/120 or 480Y/277 volts as available.

Monthly Rate:

Customer Charge: \$30.46

Energy Charge: 12.536 cents per kWh

I

Minimum Monthly Charge: The customer charge of \$30.46

Fuel and Purchased Power Cost Adjustment: The energy charge of the foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Numbers 68 and 70.

Tariff Advice No. 422-121

**Pursuant to U-23-047(1)/U-23-048(1)**

Issued by:

Chugach Electric Association, Inc.

Effective: September 1, 2023

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 22  
GENERAL SERVICE – LARGE  
AT SECONDARY VOLTAGE

Applicable to:

Any class of service with a demand exceeding twenty (20) kilowatts (kW) for three consecutive months and metered at Secondary voltage.

Character of Service:

Single or three phase 60 Hertz alternating current at 120/240, 240/120, 208Y/120 or 480Y/277 volts as available.

Monthly Rate:

Customer Charge:	\$92.61	
Demand Charge:	\$47.00	per kW of billing demand I
Energy Charge:	0.526	cents per kWh I

Minimum Monthly Charge: The customer charge of \$92.61

Conditions:

1. Demand is determined by using the maximum average rate of energy use for any 15 minute interval.
2. The billing demand shall be the greater of the following:
  - a. The recorded maximum demand for the month, or
  - b. Eighty percent (80%) of the maximum demand recorded during the preceding eleven (11) months, or
  - c. The contract demand, under a special contract for a customer with on-site generation.
3. Demand charges for self-generating customers may not be calculated based upon demand required to resynchronize and return the customer's self-generating output to parallel operation with the utility as measured during the one-hour period after power to a self-generating customer is restored following a forced outage that originates on the utility's side of the meter, and affects service to the self-generating customer.

**Fuel and Purchased Power Cost Adjustment:** The energy charge of the foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power, as described on Tariff Sheet Numbers 68 and 70.

Tariff Advice No. 422-121

**Pursuant to U-23-047(1)/U-23-048(1)**

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**JUL 21 2023**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**LARGE GENERAL SERVICE – ELECTRIC VEHICLE CHARGING  
SECONDARY SERVICE (Over 20 kW)**

Available for electric vehicle charging at 120/240, 240/480 volts, single phase and 120/208, 277/480 volts, three phase where service is provided at secondary voltage. This tariff is available on an inception basis until the earlier of March 17, 2032, or an alternative tariff is established for service to electric vehicle charging.

**Monthly Rate**

Customer Charge: \$92.61 per Month

For billing periods where the customer’s load factor is 41.283% or lower, the following rates shall apply:

Demand Charge: \$0.00 per kW

Energy Charge: \$0.16120 per kWh I

For billing periods where the customer’s load factor is greater than 41.283%, the following rates shall apply:

Demand Charge: \$47.00 per kW I

Energy Charge: \$0.00526 per kWh I

**Billing Demand**

The billing demand shall be the average kW supplied during the 15-minute period of maximum use during the month.

**Load Factor**

The billing period load factor shall be calculated by dividing the average demand by the billing demand (Load Factor = (billing period kWh / hours in period) / billing period kW).

**Conditions**

1. Above service provided subject to Chugach rules and regulations.
2. This schedule will be applied to each meter at point of delivery, as appropriate, and in no event will meter readings be combined.
3. Only electric vehicle charging and ancillary loads, with a combined load of 20 kW or greater, directly applicable to electric vehicle charging services provided to the public or in support of business operations may be served under this schedule.

**Fuel and Purchased Power Cost Adjustment**

In accordance with Tariff Sheet Nos. 66 – 70 and 103, additional charges reflecting the actual cost of fuel and purchased power expense will be applied to each billing for service rendered under this schedule.

Tariff Advice No. 422-121

Issued by:

Effective: September 1, 2023

Pursuant to **U-23-047(1)/U-23-048(1)** Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA NO.: 121 1<sup>st</sup> Revision Sheet No. 81



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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 23  
GENERAL SERVICE – LARGE  
AT PRIMARY VOLTAGE

Applicable to:

Any class of service with a demand exceeding twenty (20) kilowatts (kW) for three consecutive months and metered at Primary voltage.

Character of Service:

Three phase 60 Hertz alternating current at 4160Y/2400, 12470Y/7200, or 34500Y/19900 volts as available.

Monthly Rate:

Customer Charge:	\$619.42		
Demand Charge:	\$45.49	per kW of billing demand	I
Energy Charge:	0.515	cents per kWh	I

Minimum Monthly Charge: The customer charge of \$619.42

Conditions:

1. Demand is determined by using the maximum average rate of energy use for any 15 minute interval.
2. The billing demand shall be the greater of the following:
  - a. The recorded maximum demand for the month, or
  - b. Eighty percent (80%) of the maximum demand recorded during the preceding eleven (11) months, or
  - c. The contract demand, under a special contract for a customer with on-site generation.
3. Demand charges for self-generating customers may not be calculated based upon demand required to resynchronize and return the customer's self-generating output to parallel operation with utility as measured during the one-hour period after power to a self-generating customer is restored following a forced outage that originates on the utility's side of the meter, and affects service to the self-generating customer.
4. The customer shall furnish, install, operate and maintain all electrical facilities on the load side of his service equipment.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 23  
GENERAL SERVICE - LARGE  
AT PRIMARY VOLTAGE  
(Continued)

4. Customers renting transformers from Chugach under this schedule prior to September 29, 1982 may continue to rent them for 11.74 cents per month per KVA of transformer capacity. A customer electing to discontinue renting transformers from Chugach shall, at his expense, deliver the transformer(s) to Chugach's transformer yard at 1200 East First Avenue, Anchorage.
5. Chugach will not rent transformers to new customers or customers with changed service requirements after September 29, 1982.
6. Primary metering will normally not be available unless the customer requires primary voltage for his distribution system. After October 1, 1990, customers requesting primary metering will execute a contract to take the service specified for minimum five year period. If a customer terminates the service prior to completing five (5) years of service, he shall pay Chugach for unrecovered capital investment in an amount equal to the difference between gross revenues received to date and the cost of Chugach's associated capital investment.

Fuel and Purchased Power Cost Adjustment: The foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Number 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**LARGE GENERAL SERVICE – ELECTRIC VEHICLE CHARGING  
PRIMARY SERVICE (Over 20 kW)**

Available for three-phase primary service for electric vehicle charging. This tariff is available on an inception basis until the earlier of March 17, 2032, or until an alternative tariff is established for electric vehicle charging.

**Monthly Rate**

Customer Charge: \$619.42 per Month

For billing periods where the customer’s load factor is 39.930% or lower, the following rates shall apply:

Demand Charge:	\$0.00	per kW	
Energy Charge:	\$0.16120	per kWh	I

For billing periods where the customer’s load factor is greater than 39.930%, the following rates shall apply:

Demand Charge:	\$45.49	per kW	I
Energy Charge:	\$0.00515	per kWh	I

**Billing Demand**

The billing demand shall be the average kW supplied during the 15-minute period of maximum use during the month.

**Load Factor**

The billing period load factor shall be calculated by dividing the average demand by the billing demand (Load Factor = (billing period kWh / hours in period) / billing period kW).

**Conditions**

1. Above service provided subject to Chugach rules and regulations.
2. This schedule will be applied to each meter at point of delivery, as appropriate, and in no event will meter readings be combined.
3. Only electric vehicle charging and ancillary loads, with a combined load of 20 kW or greater, directly applicable to electric vehicle charging services provided to the public or in support of business operations may be served under this schedule.

**Fuel and Purchased Power Cost Adjustment**

In accordance with Tariff Sheet Nos. 66 – 70 and 103, additional charges reflecting the actual cost of fuel and purchased power expense will be applied to each billing for service rendered under this schedule.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 25  
REPLACEMENT ENERGY SERVICE - AWWU

Applicable to:

The Municipality of Anchorage, d/b/a/ Anchorage Water and Wastewater Utility (“AWWU”), solely for the purpose of AWWU providing replacement energy to the Eklutna Power Project as compensation for the diversion of water from the Eklutna Power Project to the Eklutna Water Project.

Character of Service:

Replacement energy service will be provided to AWWU, with such energy to be received at the Eklutna Power Project through displacement by means of an adjustment to Chugach’s monthly allotment of delivered energy from the Eklutna Power Project.

Monthly Rate:

Energy Charge: 2.561 cents per kWh

Minimum Monthly Charge: None

Conditions:

The quantity of replacement energy for which Chugach bills AWWU under this schedule shall be equal to the quantity of displaced energy which Chugach supplied to the Eklutna Power Project through an adjustment to Chugach’s monthly allotment of delivered energy.

Fuel and Purchased Power Cost Adjustment: The foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Numbers 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**SCHEDULE 27  
INTERRUPTIBLE POWER AT SECONDARY VOLTAGE**

**Applicable to:**

Customers with expected peak loads of at least 100 kW, subject to the limitations described below, taking service through facilities installed entirely at customer expense, or taking service through facilities which have been in continuous use for a period of 60 consecutive months prior to the customer taking service under Schedule 27.

**Availability:**

Only 10 MW of capacity is available for service under this rate schedule. Service is available for up to 10 MW of peak load. Service will not be available to new customers under this Schedule if the sum of the expected peak loads of all customers taking service under this schedule including the expected peak load of the customer making application exceeds 10 MW. For purposes of this determination, expected peak loads of existing customers taking service under Schedule 27 will be deemed to be the higher of the highest historical load of the customer or the peak load declared by the customer when he/she first applied for the service, unless the utility has credible specific evidence that the customer's peak load will differ from this level.

**Term of Service and Waiting List Provisions:**

Customers denied service under Schedule 27 because the sum of expected peak loads would exceed 10 MW may have their names placed on a waiting list (the "Schedule 27 waiting list"). As service becomes available due to discontinuation of service to existing customers, service will be offered to customers on the schedule 27 waiting list, in the same order as the customers were added to the waiting list, until all available service has been taken by new customers, or all customers on the Schedule 27 waiting list have been offered service.

Customers initially taking service under Schedule 27 may reserve service for a term of up to ten years. Customers with less than 5 years' remaining term may extend their term to up to five years from date of extension.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

Chugach will require customers taking service under Schedule 27 to designate the expected peak load and the periods during which they will take service each year. Chugach may refuse to grant an extension of the service term to any customer if there is a waiting list at the time of the request and the customer has not met one of the following conditions:

(1) during the 12 months prior to the request the customer has taken an amount of energy equal to 4% of the greater of the product of the number of hours in the customer's designated service period and the customer's designated peak load, or the product of the number of hours in the customer's designated service period and the customer's maximum historical peak load, or

(2) during the 24 months prior to the request the customer has taken an amount of energy equal to 8% of the greater of the product of the number of hours in the customer's designated service period for the two years and the customer's designated peak load, or the product of the number of hours in the customer's designated service period for the two years and the customer's maximum historical peak load.

A customer taking service under Schedule 27 may modify his/her designated service one time during any 12 month period *provided that* such modification does not result in an increase in expected peak load for Schedule 27, as defined above, to more than 10 MW for any period.

A customer may modify his/her designated peak load one time during any 12 month period *provided that* such modification does not result in an increase in expected peak load for Schedule 27, as defined above, to more than 10 MW for any period *and provided further that* such modification does not reduce the customer's expected peak load to a level below 100 kW. For a reduction in designated peak load, the customer will be required to present credible evidence to Chugach that his/her peak load will not exceed the new designation.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

RATE SCHEDULE 27  
INTERRUPTIBLE POWER AT SECONDARY VOLTAGE  
(CONTINUED)

Character of Service:

Single or three phase 60 Hertz alternating current at 120/240, 240/120, 208Y/120, or 480Y/277 volts, as available.

Monthly Rate:

Customer Charge:	\$92.61	
Demand Charge:	None	
Energy Charge:	39.760 cents per kWh	I

Minimum Monthly Charge: The customer charge of \$92.61

Special Terms and Conditions:

1. Service under Schedule 27 is interruptible at any time without notice at the utility's discretion. After each interruption, Chugach will restore service as quickly as possible provided that service to customers taking service under any rate schedule other than Schedules 27, 600, 700, and 750 is not adversely affected.
2. The Utility may install, at customer expense, automatic load shedding equipment which will disconnect the customer's loads if system frequency falls below 59.7 Hertz.
3. The Utility may install, at customer expense, remote relaying equipment which will allow the Utility's dispatchers to disconnect the customer's loads by operation of the relay from the dispatch center.

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

RATE SCHEDULE 27  
INTERRUPTIBLE POWER AT SECONDARY VOLTAGE  
(CONTINUED)

4. The utility may install, at customer expense, all necessary remote metering equipment and information display to allow the Utility's dispatchers to know what the customer's loads are at any time and to know what the total interruptible load on the system is at any time.
5. Chugach will not be obligated to acquire, install, or purchase generating capacity or contract for wholesale power to serve any customer taking service under this rate schedule. Chugach will design, construct, or install any facilities deemed necessary to serve any customer taking service under this rate schedule only if the customer agrees to pay, in advance, the cost of these facilities.

Fuel and Purchased Power Cost Adjustment: The foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Numbers 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 28  
NET REQUIREMENTS SERVICE

Applicable to:

Any customer that is otherwise eligible for service under, and satisfies the conditions of, Schedule 22 and that is partly served by on-site generation owned by the customer, where such generation has a nameplate capacity greater than 25 kW but not greater than 5,000 kW, and completed all procedures in Section 207 of Chugach's Interconnection and Operating Requirements for Non-Utility Generation Up to 5,000 kVa.

Character of Service:

Single or three phase 60 Hertz alternating current at 120/240, 240/120, 208Y/120 or 480Y/277 volts as available.

Monthly Rate:

Customer Charge:	\$92.61		
Demand Charge:	\$47.00	per kW of billing demand	I
Energy Charge:	0.526	cents per kWh	I

Minimum Monthly Charge:      The customer charge of \$92.61

Conditions:

1. Demand is determined by using the maximum average rate of energy supplied by Chugach for any 15 minute interval.
2. The billing demand shall be the greater of the following:
  - a. The recorded maximum demand supplied by Chugach for the month, or
  - b. Eighty percent (80%) of the maximum recorded demand supplied by Chugach during the preceding eleven (11) months, or
  - c. The contract demand, under a special contract.

Tariff Advice No. 422-121      Issued by:      Effective: September 1, 2023

**Pursuant to U-23-047(1)/U-23-048(1) Chugach Electric Association, Inc.**

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 28  
NET REQUIREMENTS SERVICE  
AT SECONDARY VOLTAGE  
(Continued)

Customer shall discontinue parallel operation when requested by Chugach, in accordance with prudent utility practice, for the reasons stated in Section 504 of Chugach’s Interconnection and Operating Requirements for Non-Utility Generation Up to 5,000 kVA. During any such period of discontinuation, Chugach shall be obligated to serve customer’s entire load. Chugach shall not use the provision of additional service due to such discontinuation as a basis for applying demand charge in Condition 2.a or 2.b.

3. Upon completion of Section 207, procedure E, of Chugach’s Interconnection and Operating Requirements for Non-Utility Generation Up to 5,000 kVa, or a later date agreed to by the parties, Chugach will serve the requirements of the customer, net of the power provided by the customer’s generation, but the maximum demands recorded prior to the initial commencement of the operation of the customer’s generation will be disregarded for purposes of applying the demand charge Condition 2.b.
4. All energy and per kWh charges shall be applied to all kWh supplied by Chugach during the billing period.
5. Service is provided subject to Chugach’s rules and regulations.
6. The maximum demand will be measured by a meter or indicator furnished and installed by Chugach on a meter base furnished and installed by the customer.
7. The customer will make a reasonable effort to maintain unity power factor. Demand charges will be adjusted for customers with 50 kW or more of measured demand to correct for average power factors lower than 90% and may be similarly adjusted for other customers as Chugach deems necessary. Such adjustments will be made by increasing the measured demand 1% for each 1% by which the average power factor is less than 90% lagging.
8. Customer’s generation must at all times comply with all applicable provisions of Chugach’s Interconnection and Operating Requirements for Non-Utility Generation Up to 5,000 kVa and preliminary and final letters of agreement entered into pursuant to Sections 206 and 207.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 28  
NET REQUIREMENTS SERVICE  
AT SECONDARY VOLTAGE  
(Continued)

- 9. Customer shall use the electric output of customer's generation only to serve part of customer's electric loads, and shall not sell or otherwise provide electric capacity or energy to others. Absent prior approval by Chugach, electric output from customer's generation shall not flow into Chugach's electric system and Chugach may require customer, at customer's expense, to install equipment and/or comply with operational procedures as Chugach reasonably determines is necessary to prevent such flows into Chugach's electric system. Any such flows that result from an approved installation that meets the applicable requirements of Chugach's Interconnection Standards and Institute of Electrical Engineering (IEEE) standards are allowed.

Fuel and Purchased Power Cost Adjustment: The energy charge of the foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power, as described on Tariff Sheet Numbers 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**SCHEDULE 29  
NET REQUIREMENTS SERVICE**

**Applicable to:**

Any customer that is otherwise eligible for service under, and satisfies the conditions of, Schedule 23 and that is partly served by on-site generation owned by the customer, where such generation has a nameplate capacity greater than 25 kW but not greater than 5,000 kW, and completed all procedures in Section 207 of Chugach's Interconnection and Operating Requirements for Non-Utility Generation Up to 5,000 kVa.

**Character of Service:**

Three phase 60 Hertz alternating current at 4160Y/2400, 12470Y/7200, or 34500Y/19900 volts as available.

**Monthly Rate:**

Customer Charge:	\$619.42	
Demand Charge:	\$45.49 per kW of billing demand	I
Energy Charge:	0.515 cents per kWh	I
Minimum Monthly Charge:	The customer charge of \$619.42	

**Conditions:**

1. Demand is determined by using the maximum average rate of energy supplied by Chugach for any 15 minute interval.
2. The billing demand shall be the greater of the following:
  - a. The recorded maximum demand supplied by Chugach for the month, or
  - b. Eighty percent (80%) of the maximum recorded demand supplied by Chugach during the preceding eleven (11) months, or
  - c. The contract demand, under a special contract.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 29  
NET REQUIREMENTS SERVICE  
AT PRIMARY VOLTAGE  
(Continued)

Customer shall discontinue parallel operation when requested by Chugach, in accordance with prudent utility practice, for the reasons stated in Section 504 of Chugach's Interconnection and Operating Requirements for Non-Utility Generation Up to 5,000 kVa. During any such period of discontinuation, Chugach shall be obligated to serve customer's entire load. Chugach shall not use the provision of additional service due to such discontinuation as a basis for applying demand charge in Condition 2.a or 2.b.

3. Upon completion of Section 207, procedure E, of Chugach's interconnection and Operating Requirements for Non-Utility Generation Up to 5,000 kVa, or a later date agreed to by the parties, Chugach will serve the requirements of the customer, net of the power provided by the customer's generation, but the maximum demands recorded prior to the initial commencement of the operation of the customer's generation will be disregarded for purposes of applying the demand charge Condition 2.b.
4. All energy and per kWh charges shall be applied to all kWh supplied by Chugach during the billing period.
5. Service is provided subject to Chugach's rules and regulations.
6. The maximum demand will be measured by a meter or indicator furnished and installed by Chugach on a meter base furnished and installed by the customer.
7. The customer will make a reasonable effort to maintain unity power factor. Demand charges will be adjusted for customers with 50 kW or more of measured demand to correct for average power factors lower than 90% and may be similarly adjusted for other customers as Chugach deems necessary. Such adjustments will be made by increasing the measured demand 1% for each 1% by which the average power factor is less than 90% lagging.
8. The customer, at the customer's expense, shall furnish, install and maintain switches, transformers, regulators and other necessary equipment on the customer's premises.
9. Customer's generation must at all times comply with all applicable provisions of Chugach's Interconnection and Operating Requirements for Non-Utility Generation Up to 5,000 kVa and preliminary and final letters of agreement entered into pursuant to Sections 206 and 207.

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Chugach Electric Association, Inc.

SCHEDULE 29  
NET REQUIREMENTS SERVICE  
AT PRIMARY VOLTAGE  
(Continued)

10. Customer shall use the electric output of customer's generation only to serve part of customer's electric loads, and shall not sell or otherwise provide electric capacity or energy to others. Absent prior approval by Chugach, electric output from customer's generation shall not flow into Chugach's electric system and Chugach may require customer, at customer's expense, to install equipment and/or comply with operational procedures as Chugach reasonably determines is necessary to prevent such flows into Chugach's electric system. Any such flows that result from an approved installation that meets the applicable requirements of Chugach's Interconnection Standards and Institute of Electrical Engineering (IEEE) standards are allowed.

Fuel and Purchased Power Cost Adjustment: The energy charge of the foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power, as described on Tariff Sheet Numbers 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 31, 32, AND 33  
GENERAL SERVICE - SEASONAL  
AT SECONDARY VOLTAGE

Applicable to:

Any class of service which meets all of the following criteria will be billed under Schedule 31, 32, or 33. Whether a customer is on Schedule 31, 32, or 33 depends upon the timing of the summer peak activity and the customer's specific billing cycle.

1. The customer has provided reasonable assurance that its loads will be consistent with criteria #2-6 listed below, and the customer has no billing history during the prior 11 months which is inconsistent with those criteria.
2. Annual demand peak occurring during the specified summer season.
3. Monthly peak demand of no greater than 20 kilowatts (kW) recorded during each month of the specified winter season.
4. Monthly peak demands of greater than 20 kilowatts (kW) recorded during at least three months of the specified summer season.
5. Peak demand for the specified winter season no greater than fifty percent (50%) of the peak demand for the specified summer season.
6. Metered at secondary voltage.

Character of Service:

Single or three phase 60 Hertz alternating current at 120/240, 120/208Y, 208Y/120, 240/120, or 480Y/277 volts as available.

The winter season and summer season shall be defined by the billing months identified in one of the following seasonal schedules:

Schedule 31	Winter Season:	October through April
	Summer Season:	May through September
Schedule 32	Winter Season:	November through May
	Summer Season:	June through October
Schedule 33	Winter Season:	November through April
	Summer Season:	May through October

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA NO.: 121 1<sup>st</sup> Revision

Sheet No. 95



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**JUL 03 2023**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 31, 32, AND 33  
GENERAL SERVICE - SEASONAL  
AT SECONDARY VOLTAGE  
(Continued)

Monthly Rate:

Winter Months

Customer Charge: \$92.61

Energy Charge: 12.536 cents per kWh I

Minimum Monthly Charge: The customer charge of \$92.61

Summer Months

Customer Charge: \$92.61

Demand Charge: \$47.00 per kW of billing demand I

Energy Charge: 0.526 cents per kWh I

Minimum Monthly Charge: The customer charge of \$92.61

Conditions:

1. Demand is equal to the maximum average rate of energy use for any 15 minute interval.
2. The billing demand shall be the greatest of the following:
  - a. The recorded maximum demand for the month, or
  - b. Eighty percent (80%) of the maximum demand recorded during the preceding eleven (11) months, or
  - c. The contract demand, under a special contract for a customer with onsite generation.
3. Demand charges for self-generating customers may not be calculated based upon demand required to resynchronize and return the customer's self-generating output to parallel operation with the utility as measured during the one-hour period after power to a self-generating customer is restored following a forced outage that originates on the utility's side of the meter, and affects service to the self-generating customer.

Tariff Advice No. 422-121

Issued by:

Effective: September 1, 2023

**Pursuant to U-23-047(1)/U-23-048(1)** Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULES 31, 32 AND 33  
GENERAL SERVICE - SEASONAL  
AT SECONDARY VOLTAGE  
(Continued)

- Chugach will monitor the level of metered demand during each of the billing periods during the specified winter season, and if Chugach should determine that demand exceeds 20 kilowatts (kW), then it will move customer billing from the Seasonal Rate Schedule to Rate Schedule 22 beginning with the next billing period. Chugach will provide the customer with written notification of the change in billing within five days of the meter read and no later than seven days before the next bill is rendered. Once moved from the Seasonal Rate Schedule, customer billing shall not be moved back to this schedule until such time that the customer reestablishes a demand pattern which meets the criteria on Tariff Sheet No. 94, or until Chugach determines that the customer's operating conditions have changed in a manner which would warrant such a change.

Fuel and Purchased Power Cost Adjustment: The foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Number 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

Tariff Advice No.

Issued by:

Effective: **December 23, 2020**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 34, 35, AND 36  
GENERAL SERVICE - SEASONAL  
AT PRIMARY VOLTAGE

Applicable to:

Any class of service which meets all of the following criteria will be billed under Schedule 34, 35, or 36. Whether a customer is on Schedule 34, 35, or 36 depends upon the timing of the summer peak activity and the customer's specific billing cycle.

1. The customer has provided reasonable assurance that its loads will be consistent with criteria #2-6 listed below, and the customer has no billing history during the prior 11 months which is inconsistent with those criteria.
2. Annual demand peak occurring during the specified summer season.
3. Monthly peak demands of no greater than 20 kilowatts (kW) recorded during each month of the specified winter season.
4. Monthly peak demands of greater than 20 kilowatts (kW) recorded during at least three months of the specified summer season.
5. Peak demand for the specified winter season no greater than fifty percent (50%) of the peak demand for the specified summer season.
6. Metered at Primary voltage.

Character of Service:

Single or three phase 60 Hertz alternating current at 4160Y/2400, 12470Y/7200, or 34500Y/19900 volts as available.

The winter season and summer season shall be defined by the billing months identified in one of the following seasonal schedules:

Schedule 34	Winter Season:	October through April
	Summer Season:	May through September
Schedule 35	Winter Season:	November through May
	Summer Season:	June through October
Schedule 36	Winter Season:	November through April
	Summer Season:	May through October

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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Chugach Electric Association, Inc.

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REGULATORY COMMISSION OF ALASKA



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Chugach Electric Association, Inc.

SCHEDULE 34, 35, AND 36  
GENERAL SERVICE - SEASONAL  
AT PRIMARY VOLTAGE  
(Continued)

Monthly Rate:

Winter Months

Customer Charge:	\$619.42	
Energy Charge:	9.873 cents per kWh	I
Minimum Monthly Charge:	The customer charge of \$619.42	

Summer Months

Customer Charge:	\$619.42	
Demand Charge:	\$45.49 per kW of billing demand	I
Energy Charge:	0.515 cents per kWh	I
Minimum Monthly Charge:	The customer charge of \$619.42	

Conditions:

1. Demand is equal to the maximum average rate of energy use for any 15 minute interval.
2. The billing demand shall be the greatest of the following:
  - a. The recorded maximum demand for the month, or
  - b. Eighty percent (80%) of the maximum demand recorded during the preceding eleven (11) months, or
  - c. The contract demand, under a special contract for a customer with onsite generation.
3. Demand charges for self-generating customers may not be calculated based upon demand required to resynchronize and return the customer's self-generating output to parallel operation with the utility as measured during the one-hour period after power to a self-generating customer is restored following a forced outage that originates on the utility's side of the meter, and affects service to the self-generating customer.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 34, 35, AND 36  
GENERAL SERVICE - SEASONAL  
AT PRIMARY VOLTAGE  
(Continued)

4. Chugach will monitor the level of metered demand during each of the billing periods during the specified winter season, and if Chugach should determine that demand exceeds 20 kilowatts (kW), then it will move customer billing from the Seasonal Rate Schedule to Rate Schedule 23 beginning with the next billing period. Chugach will provide the customer with written notification of the change in billing within five days of the meter read and no later than seven days before the next bill is rendered. Once moved from the Seasonal Rate Schedule, customer billing shall not be moved back to this schedule until such time that the customer reestablishes a demand pattern which meets the criteria on Tariff Sheet No. 97 or until Chugach determines that the customer's operating conditions have changed in a manner which would warrant such a change.

Fuel and Purchased Power Cost Adjustment: The foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Number 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

Tariff Advice No.

Issued by:

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Chugach Electric Association, Inc.

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**JUL 03 2023**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULES 41-45  
AREA LIGHTING SERVICE

Applicable to:

Areas, other than public thoroughfares, provided with dusk-to-dawn lighting by pole mounted luminaries.

Character of Service:

Under these schedules Chugach will supply energy to and maintain an unmetered area lighting luminaire, owned by Chugach.

Monthly Rates:

<u>Schedule</u>	<u>Watts</u>	<u>Rate</u>	
41	150	\$ 39.87	I
42	175	\$ 41.94	I
43	250	\$ 47.29	I
44	400	\$ 58.78	I
45	1000	\$ 107.24	I

Conditions:

1. The luminaire or area lighting system shall be equipped with automatic controls to turn the lights on at dusk and off at dawn.
2. These rates are based upon installation of luminaries on existing Chugach wood poles and connection to existing overhead service conductors. When new installations are requested, the cost shall be paid to Chugach as a contribution in aid-of-construction in accordance with Section 3.3. The customer may execute a contract to spread installation cost up to, but no more than, five (5) years. If the customer terminates service prior to payment completion, the balance remaining in his contract shall be due and payable upon service termination.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULES 41-45  
AREA LIGHTING SERVICE  
(Continued)

3. As of October 1, 1990, Chugach will no longer install new mercury vapor luminaries. Upon maintenance replacement, existing mercury vapor luminaries shall be replaced with the next lower wattage high pressure sodium luminaire and the customer shall be billed at the appropriate rate schedule.
4. A customer may elect to construct lighting facilities and Chugach shall connect and maintain such facilities following inspection and approval by Chugach for service under these schedules.

Fuel and Purchased Power Cost Adjustment: Charges set forth under “Monthly Rate”, above are subject to adjustments to recover the cost of power, as described on Tariff Sheet 68 and 70.

For such and other purposes, the number of kilowatt hours to be incorporated in billing and other records, delivered monthly to each luminaire served hereunder, shall be determined to be the product of the fixture input wattage and the operating hours per month. The operating hours are determined monthly by reading a master photo-electric cell. Fixture input wattage is taken as 1.069 times the lamp wattage rating.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

Tariff Advice No.

Issued by:

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Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

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**JUL 03 2023**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULES 60-64  
STREET LIGHTING SERVICE

Applicable to:

Lighting by pole-mounted luminaries of public thorough-fares under the jurisdiction of governmental agencies.

Character of Service:

Under these schedules, Chugach will supply energy to and maintain an unmetered streetlight luminaire owned by Chugach.

Monthly Rates:

<u>Schedule</u>	<u>Watts</u>	<u>Rate</u>	
60	150	\$ 39.87	I
61	175	\$ 41.94	I
62	250	\$ 47.29	I
63	400	\$ 58.78	I
64	1000	\$ 107.24	I

Conditions:

1. The luminaries or street lighting system shall be equipped with automatic controls to turn the lights on at dusk and off at dawn.
2. These rates are based upon installation of luminaries on existing Chugach wood poles and connection to existing overhead service conductors. When new installations are requested, the cost shall be paid to Chugach as a contribution in aid of construction in accordance with Section 3.3.
3. As of October 1, 1990, Chugach will no longer install new mercury vapor luminaries. Upon maintenance replacement, existing mercury vapor luminaries shall be replaced with the next lower wattage of high pressure sodium luminaire and the customer shall be billed at the appropriate rate schedule.
4. When the customer requires a change out from mercury vapor luminaries to sodium vapor luminaries, an amount equal to the cost of the change out and the new luminaire shall be paid to Chugach in advance of construction in accordance with tariff Section 3.4.

**Fuel and Purchased Power Cost Adjustment:** Charges set forth under "Monthly Rate", above are subject to adjustment to recover the Cost of Power, as described on Tariff Sheet 68 and 70.

For such and other purposes, the number of kilowatt hours to be incorporated in billing and other records, as delivered monthly to each luminaire served hereunder, shall be determined by the product of the fixture input wattage and the operating hours per month. The operating hours are determined monthly by reading a master photo-electric cell. Fixture input wattage is taken as 1.069 times the lamp wattage rating.

Tariff Advice No. 422-121  
**Pursuant to U-23-047(1)/U-23-048(1)** Chugach Electric Association, Inc.

Issued by:

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13<sup>th</sup> Revision      Sheet No. 103

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**POST ACQUISITION PURCHASE AND SALES RATES FOR QUALIFIED COGENERATION,  
SMALL POWER PRODUCTION, AND STANDBY/BUYBACK FACILITIES**

Available in all territory served by Chugach, or as required pursuant to contractual arrangements under wholesale power sales agreement. Applicable to qualified cogeneration, small power production and standby/buyback facilities of 200 kW or less. The type of service shall be single or three phase 60 hertz at Chugach's standard voltages.

Chugach reserves the right to limit the number of retail customers receiving service under the terms of this schedule to one per substation circuit. Chugach further reserves the right to reduce the buyback rates for costs associated with the integration of the energy produced by the qualifying facility into the Chugach system. Integration costs are project specific and determined through the completion of an integration study completed by Chugach.

Monthly Rates

Power sales supplied by Chugach to the customer to meet its electric requirements will be priced at the applicable rates. The rate paid by Chugach to the customer for kWh supplied by the customer to Chugach is the average avoided cost calculated as follows:

1. Fuel and purchased power expense, excluding Bradley Lake and Fire Island Wind, predicted for next quarter in the determination of fuel and purchased power rates.	\$20,716,782	
2. Non-fuel O&M expense	\$126,545	
3. Balancing Account as of December 31, 2023	(\$57,094)	
4. Total Avoided Cost Included in Rate	\$20,786,233	
5. kWh Sales at G&T predicted for next quarter:	350,628,167	
6. Avoided Cost per kWh at G&T (L4) / L5	<u>\$0.05928</u>	I
7. Avoided Cost at Retail Primary Voltage		
a) Retail Primary kWh Sales at G&T	63,278,559	
(Percent Primary Distribution Losses at G&T: 1.69%)		
b) Retail Primary kWh Sales at Delivery	62,208,923	
c) Avoided Costs per kWh at Retail Primary (L6 x L7a / L7b)	<u>\$0.06030</u>	I
8. Avoided Cost at Retail Secondary Voltage		
a) Retail Secondary kWh Sales at G&T	387,069,234	
(Percent Secondary Distribution Losses at G&T: 2.42%)		
b) Retail Secondary kWh Sales at Delivery	377,692,170	
c) Avoided Costs per kWh at Retail Secondary (L6 x L8a / L8b)	<u>\$0.06075</u>	I

These rates will change concurrently with cost of power factor adjustments and general rate revisions.

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STATE OF ALASKA  
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Chugach Electric Association, Inc.

**POST ACQUISITION PURCHASE AND SALES RATES FOR QUALIFIED COGENERATION, N**  
**SMALL POWER PRODUCTION, AND STANDBY/BUYBACK FACILITIES (CONTINUED) N**

Conditions:

The qualifying facility will be required to enter into a written Special Contract with Chugach prior to interconnection of Chugach and qualifying facilities. This Special Contract shall contain all applicable terms and conditions which must be met and complied with by the qualifying facility. The Special Contract will be subject to the approval of the Regulatory Commission of Alaska.

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L- Moved from Tariff Sheet No. 104

RCA No. 121

1<sup>st</sup> Revision

Sheet No. 104



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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COMMUNITY SOLAR SERVICE PRICING PILOT**

L,N

Chugach retail members may begin taking service under the Community Solar Service Pricing Pilot beginning with the March 2025 monthly billing period. The pilot period extends for a 36-month period ending February 29, 2028. Community Solar Service Pricing Pilot is available to retail members for all member service classes.

This service offering is available, on a voluntary basis, through a 12-month subscription. The 12-month subscription price offering is designed to distribute the project costs equitably across the life of the Community Solar facility, and to reduce project administration costs.

There are a total of 1,280 solar panels available for member subscriptions under the Community Solar Service pricing pilot. Members electing to enroll in the service will submit a subscription application form and may request up to 20 panels per meter. In year one of the pilot period, applications for subscriptions will be accepted from October 1, 2024 through February 14, 2025. If Chugach receives subscriptions totaling more than 1,280 panels, a lottery will be used to determine which members are enrolled in the Community Solar Service Pricing Pilot. Any remaining applicants will be placed on a wait list in the order they are drawn from the random lottery selection. As panels become available for new subscriptions, the applicants on the wait list will be offered enrollment in the order of the wait list. After the initial 12-month subscription period, Chugach will submit annual filings by April 1 of each year updating the 12-month subscription rates to reflect actual Community Solar Service Pricing Pilot project costs incurred during the prior 12-month calendar year test period with any changes to take effect May 15 of each year.

On a monthly basis, the actual energy produced by the Community Solar facility will be applied equally across the total number of panels to determine the kilowatt hour (kWh) production share to be allocated to each panel. The energy produced by unsubscribed panels will be used by Chugach in the provision of electricity to its retail members.

Based on the number of panels in each member’s subscription, the production share will be applied as a credit on program participant’s monthly bills. Energy generated and applied to member bills will be treated in the same manner as net metering customers are treated (Sheets 88 to 90).

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L- Moved to Tariff Sheet No. 103.1

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Sheet No. 104.1



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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COMMUNITY SOLAR SERVICE PRICING PILOT (Continued)**

N

**Purpose:**

Chugach is proposing to initiate the Community Solar Service on a pilot basis for a 36-month period to compile information including the final project construction cost, receipt of federal tax credits, operating and maintenance expenses, member interest, renewable energy certificate treatment, and to assess modifications that may improve the subscription and pricing program. The proposed pilot period is expected to provide sufficient time to capture cost information and compile feedback to improve the service offering.

**Pilot Period:**

The Community Solar Service Pricing Pilot shall run from March 1, 2025 – February 29, 2028 (Pilot Period).

**Pilot Reporting:**

Within 60 days following expiration of the Pilot Period, Chugach will submit a report to the Regulatory Commission of Alaska detailing the results of the Community Solar Service Pricing Pilot and requesting any necessary modifications. The report will analyze:

1. Member enrollment information throughout the Pilot Period;
2. Subscription benefits compared to costs (subscription amount paid net of energy buyback vs. energy received);
3. Project performance statistics;
4. Program costs;
5. Unsubscribed energy used to meet retail system energy requirements.

The report will provide recommendations for continuation, abandonment, or modification of the Community Solar Service Pricing Pilot and may include a recommendation for a permanent Community Solar Service tariff offering. Additionally, the report will also include recommendations for the treatment of renewable energy credits associated with the Community Solar facility. Chugach may use questionnaires to gather program feedback. All customer specific data obtained by Chugach through the Community Solar Pricing Pilot shall be held confidentially, to the extent allowed by law and regulation, and any public reporting should not reveal names or locations, unless ordered to provide such data by an appropriate authority.

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COMMUNITY SOLAR SERVICE PRICING PILOT (Continued)**

N

**Monthly Billing:**

Monthly Charge per Panel: \$ 22.27

The pilot period price for the initial 12-month subscription period is based on the estimated project expense levels for the subscription period. Chugach may submit a filing to adjust the subscription price as necessary. The pilot period price for the next 12-month subscription period will be based on combined actual and estimated project expense and recovery levels. Chugach will use actual and projected period balancing accounts to track recovery and expense amounts and will adjust the subscription price as needed to recover no more, or no less than, the actual project costs. Chugach will submit annual filings by April 1 each year, or more frequently as needed, to update the subscription charge to reflect actual project costs incurred during the prior 12-month calendar year test period.

Electric bills for members enrolled in the Community Solar Service Pricing Pilot shall be computed in accordance with all applicable retail service rates contained in this operating tariff, with electric energy (kWh) calculated as follows:

1. If the members consumption of energy is greater than the members subscribed share of energy produced by the Community Solar facility during the monthly billing period, Chugach shall bill the consumer for the kWh of net electric energy consumption at the applicable retail rates contained in the operating tariff; or,
2. If the member's subscribed share of energy produced by the Community Solar facility is greater than the member's energy consumption during the monthly billing period, Chugach shall credit the member's account with an amount derived by multiplying the kWh of net subscribed energy produced by the non-firm buyback power rate contained on Tariff Sheet No. 103; or
3. If the member's account participates in the net metering program and is also enrolled in the Community Solar Service Pricing Pilot, the member's subscribed share of kWh produced by the Community Solar facility shall be combined with the kWh delivered by the member's distributed generation facility.
  - (a) If the member's combined energy production is greater than the member's energy consumption during the monthly billing period, Chugach shall credit the member's account with an amount derived by multiplying the kWh of net subscribed energy produced by the non-firm buyback power rate contained on Tariff Sheet No. 103; or,
  - (b) If the member's combined energy production is less than the member's energy consumption during the monthly billing period, Chugach shall bill the consumer for the kWh of net electric energy consumption at the applicable retail rates contained in the operating tariff.

Dollar amounts credited to the member's account shall be used to reduce amounts owed by the member in subsequent monthly billing periods. Dollar amounts credited do not expire or otherwise revert to Chugach. Unused credits will be paid to the member in the event electric service is terminated.

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**JAN 29 2024**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**COMMUNITY SOLAR SERVICE PRICING PILOT (Continued)**

**N**

**Conditions:**

- 1) The initial subscription period is a minimum 12-month term subject to the early cancellation fee and prohibition on reenrollment discussed below.
- 2) Subscriptions shall remain in effect until:
  - a. Cancelled by the member through the Chugach online member service portal, or by phone with, or in writing to, Chugach member services; or
  - b. the member breaches or fails to satisfy or follow any term or condition of Chugach’s tariff; or,
  - c. the community solar service is terminated.
- 3) A member who elects to cancel their subscription prior to completion of the 12-month enrollment period will be charged an early cancellation fee. The early cancellation fee shall be equal to the lower of; a) a charge equal to the combined total subscription charges for the remaining months in the 12-month subscription period, or b) a charge equivalent to the combined total subscription charges for four months service. Members who elect to unenroll prior to completion of the 12-month minimum enrollment period are prohibited from re-enrolling for a period of 12-months.
- 4) If the member is concurrently participating in the net metering program, as provided on in this operating tariff, the member’s onsite net metered generation capacity combined with the member’s subscribed share of the Community Solar facility installed capacity shall not exceed 25 kW.
- 5) Participating members pay a service fee in exchange for a portion of the Chugach-owned community solar facility’s kWh energy output. Participants receive this solar-generated electricity as a service from Chugach; they do not own the community solar project or any portion thereof.
- 6) The program is portable for members moving within Chugach’s service territory.
- 7) Participating members must remain current in their payment of bills as required in the operating tariff. If this is prior to the 12-month minimum period, the early cancellation fee will apply.
- 8) Chugach makes no warranty or representation, express or implied, as to the energy production of or energy credits available from the community solar facility. Solar energy credits will vary significantly from month to month based on seasonal solar intensity, weather and other conditions.
- 9) The solar facility may become subject to physical damage, equipment failure, or other events that may degrade the facility’s efficiency. Chugach shall be under no obligation to issue any refund or credit to participating members based on the efficiency or output of the solar facility. In no event shall a refund or credit be issued if the solar facility performance is degraded as a result of a *force majeure* event.

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Chugach Electric Association, Inc.

**COMMUNITY SOLAR SERVICE PRICING PILOT (Continued)**

N

**Conditions (continued):**

- 10) Receipt of energy credits pursuant to this tariff may result in taxable income to a subscriber, and each subscriber is solely responsible for determination, payment and reporting with respect to such subscriber's taxes.
- 11) Chugach reserves the right to adjust rates upward or downward, if necessary, if system conditions change or unforeseen costs or benefits arise. Any change would not affect amounts paid prior to the change for monthly subscriptions. Chugach further reserves the right to adjust the rates for costs associated with the integration of the energy produced by the solar facility into the Chugach system.
- 12) The community solar program is a voluntary means to participate in a renewable energy program through enrollment which includes a commitment to pay the subscription price. Participating members acknowledge that the subscription payment and the energy production associated with the subscription may result in a higher cost per kWh than the cost per kWh from other generation sources. Chugach has made no warranty or representation, express or implied, that participating members may or will derive an economic benefit from its subscription. Participating members further acknowledge that Chugach makes no warranty or representation, express or implied, regarding the efficiency of the solar facility, or the amount of production credit, if any, that the participating member will receive during any billing period during the term.
- 13) Each subscribing member represents and warrants that he or she is (a) subscribing to the community solar program solely to receive energy credits as described in this tariff, not for investment or speculation, not with a profit expectation, and not with a view to the resale of any credit or other benefits and (b) aware that he or she does not have an interest in the solar facility.
- 14) Chugach makes no warranty or representation, express or implied, concerning the applicability or inapplicability of any federal or state securities laws on or in relation to the community solar program.

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Sheet No. 105



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Sheet No. 105

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**June 2, 2023**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**SCHEDULE 600  
ECONOMY ENERGY TRANSACTIONS**

Applicable for delivery at 69 kV or higher voltages to utilities having generation capacity available to assume their load upon termination of the transaction.

Economy energy sales from Chugach's generating resources are on a "when, as and if" available basis and shall be interruptible at Chugach's sole discretion. Service provided under this tariff does not include associated reserves. For purposes of reserve determinations, economy energy shall be considered to have been generated or provided by the buyer.

**Rate for Economy Transactions**

The rate for economy energy shall be determined on a case-by-case basis as agreed between Chugach and the buyer, provided that the rate shall be between Chugach's incremental energy cost and buyer's decremental energy cost as described below:<sup>1</sup>

- a. Chugach's Incremental Energy Cost: The total additional fuel and variable operations and maintenance (O&M) costs, including start-up costs if a unit is started for the transaction.
- b. Buyer's Decremental Energy Cost: The total fuel and variable O&M savings from the transaction as measured by the costs avoided by the buyer from not operating its own resources. The decremental energy cost for a unit which would not operate as a result of the economy energy transaction is the average cost of power during the period of the transaction for that unit if it had been used to produce the energy purchased as economy energy.

**Market Price:** Unless the Regulatory Commission of Alaska (RCA) approves another market value proxy, the market price of Beluga River Unit (BRU) gas used for economy energy sales shall be the greater of (i) Chugach's opportunity cost of gas for meeting firm load requirements on its system, which generally would be Chugach's highest priced contracted gas, or (ii) 90% of the Cook Inlet Prevailing Value of Gas most recently published by the Alaska Department of Revenue pursuant to 15 AAC 55.173(b).

**Limitations on Sales:** If Chugach elects to use gas sourced from its ownership interest in the BRU to generate electricity for economy energy sales, Chugach shall make such a sale using the market value of the gas (as described above) to determine the cost of additional fuel (see a., above). If Chugach uses gas sourced from its ownership interest in the BRU to generate electricity for economy energy sales, Chugach shall credit the amount of the proxy market value of such gas to its members. D D

<sup>1</sup> Energy Cost when expressed as dollars per MWh (or kWh) shall be the cost for the transaction divided by the energy transaction amount.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

ECONOMY ENERGY TRANSACTIONS (Continued)

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**Documentation Requirements:** Before entering into any economy energy sale of electricity generated using Chugach-owned BRU gas (as distinguished from gas purchased from another BRU producer), Chugach shall estimate and document the margin it will earn on that economy energy sale using the market value proxy specified above to determine the value of BRU gas used as fuel for the specific sale. Chugach shall maintain records of all such estimates and file them with the RCA with each quarterly Cost of Power Adjustment filing.

Wheeling charges shall be assessed pursuant to Chugach's Transmission Wheeling Service tariff (Sheet No. 168; T-8 Non-Firm Point-To-Point Transmission Service) and applicable ancillary services in addition to the energy charges described herein.

Late Payment Charge: Bills will be increased 1 percent per month on amounts unpaid after 20 calendar days from the date the bill is rendered.

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D - Material previously on this sheet has been deleted and replaced with new material.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 700  
INTERRUPTIBLE SERVICE - FORT RICHARDSON  
AT PRIMARY VOLTAGE

Applicable to:

Fort Richardson, a U.S. Army installation, solely for the purpose of wholesale interruptible power sales.

Character of Service:

Three phase 60 Hertz alternating current at 34500Y/19900 volts.

Monthly Rate:

Energy Charge: 7.646 cents per kWh

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Minimum Monthly Charge:

None

Conditions:

1. This service shall be fully interruptible at Chugach's discretion. Fort Richardson shall provide its own firm capacity in case of interruption.
2. Fort Richardson shall maintain a minimum of 90% power factor while taking service from Chugach. If Fort Richardson fails to maintain this power factor in any given billing period, a power factor penalty of .005 cents per kilowatt-hour shall be assessed for that billing period.
3. Fort Richardson shall coordinate any installation or settings of load shedding equipment affecting this service with Chugach.
4. Rates for this interruptible service shall be based upon direct costs and the fully allocated cost of service excluding demand-allocated costs. Rates established under this rate schedule may be modified only upon the filing of a general rate increase by Chugach.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 700  
INTERRUPTIBLE SERVICE - FORT RICHARDSON  
AT PRIMARY VOLTAGE  
(Continued)

5. Upon reaching annual kWh sales of 7,454,650 (the amount required for the recovery of annual capital costs approved in TA 206-121), Fort Richardson may elect to be billed at rates based upon the same determination utilized for economy energy transactions as described on Chugach's Tariff Sheet No. 105.
6. If, in response to a specific request to do so by the customer, Chugach starts an idle turbine for the purpose of serving the customer's load, the customer will be required to pay, in addition to the Energy Charge specified above, the actual cost of starting the turbine. Prior to starting the turbine, Chugach will notify the customer of the start cost and confirm the customer's request to start the turbine.

Fuel and Purchased Power Cost Adjustment: The foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Number 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

Tariff Advice No.

Issued by:

Effective: **December 23, 2020**

Chugach Electric Association, Inc.

P.O. Box 196300 Anchorage, Alaska 99519-6300

RCA NO.: 121 1<sup>st</sup> Revision

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 750  
INTERRUPTIBLE SERVICE - ELMENDORF  
AT PRIMARY VOLTAGE

Applicable to:

Elmendorf, a U.S. Air Force installation, solely for the purpose of interruptible bulk power sales.

Character of Service:

Three phase 60 Hertz alternating current at 34500Y/19900 volts.

Monthly Rate:

Energy Charge: 8.895 cents per kWh

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Minimum Monthly Charge: None

Conditions:

1. This service shall be fully interruptible at Chugach's discretion. Elmendorf shall provide its own firm capacity in case of interruption.
2. Elmendorf shall coordinate any installation or settings of load shedding equipment affecting this service with Chugach.
3. If, in response to a specific request to do so by the customer, Chugach starts an idle turbine for the purpose of serving the customer's load, the customer will be required to pay, in addition to the Energy Charge specified above, the actual cost of starting the turbine. Prior to starting the turbine, Chugach will notify the customer of the start cost and confirm the customer's request to start the turbine.

Fuel and Purchased Power Cost Adjustment: The foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power, as described on Tariff Sheet Numbers 68 and 70.

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 760  
LIMITED ALL REQUIREMENTS SERVICE AT PRIMARY VOLTAGE

Applicable to:

Any Customer to whom Chugach is authorized to provide service but is not obligated to provide service (except pursuant to Schedule 700, 750, 760, 770, or 780) and whose peak load in any 12 month period is at least 10 MW. Availability of this service may be terminated by the utility by giving twelve (12) months' advance written notice to the authorized representatives of all customers then taking service and prompt written notice to all persons with pending applications for service under this schedule 760. Copies of such notices shall also be provided to the Regulatory Commission of Alaska.

Character of Service:

Three phase 60 Hertz alternating current at 34500Y/19900 volts.

Monthly Rate:

Customer Charge:	\$668.42		
Demand Charge:	\$47.95	per kW of Billing Demand	I
Energy Charge:	0.515	cents per kWh	I

Minimum Monthly Charge: The customer charge of \$668.42 <sup>1</sup>

Definitions:

1. Metered Demand is the maximum average rate of energy use for any 15 minute interval in the billing period.

<sup>1</sup> If the customer is taking service under more than one rate schedule at a single meter, only one customer charge shall apply

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Chugach Electric Association, Inc.

SCHEDULE 760  
(Continued)

2. Billing Demand is the greater of the following:
  - a. The recorded maximum demand for the month, or
  - b. 70% of the highest Metered Demand recorded during the preceding eleven (11) months.

Conditions:

1. Chugach may require the customer to enter into a special contract with Chugach that specifies the term of Service and the parties' respective rights upon termination of service. Any such special contract will not become effective until approved by the Regulatory Commission of Alaska ("RCA").
2. Service is for 100% of the customer's requirements. All power generated by the customer's generation facilities must be sold either to the utility or to a third party to whom the power may be delivered. In providing service pursuant to this Rate Schedule 760, Chugach is not committed to purchase power from the customer or to wheel such power to any third party. Any purchase or wheeling arrangements between Chugach and the customer related to power generated by the customer's generation facilities will be by mutually acceptable contract and independent of this Rate Schedule.
3. Operating Reserves: The customer will be responsible for all billing demands arising as a consequence of forced outages of the customer's generation facilities, *provided that* the customer and Chugach may, by mutual agreement, enter into an operating reserve sharing arrangement which will relieve the customer of responsibility for billing demands arising as a consequence of the initial 2 hours of any forced outage or failure of a supplier other than Chugach to deliver power in consideration of which the customer shall provide Operating Reserves to Chugach meeting the following conditions:
  - a. The customer and Chugach must be interconnected in a manner which, in the sole opinion of Chugach, will make it technically feasible for the customer to supply operating reserves to Chugach.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

Tariff Advice No.

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P.O. Box 196300 Anchorage, Alaska 99519-6300

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 760  
(Continued)

- b. The customer must supply to Chugach operating reserves, as defined in ADDENDUM NO. 1 TO THE ALASKA INTERTIE AGREEMENT dated December 23, 1985 and, in particular, SECTIONS A-1.1 *et seq.*, B-2.1 *et seq.*, and B-2.2 *et seq.* which provisions are, by this reference, incorporated herein and made a part of this rate schedule, in an amount that constitutes the same percentage of the customer's generation output as Chugach's operating reserve obligation is of its generation output.
- 4. The customer may terminate its service under this rate schedule by giving 30 days' advance written notice to Chugach. However, service under Schedule 760 may not be resumed within 12 months of termination by the customer.

Fuel and Purchased Power Cost Adjustment: The energy charge of the foregoing monthly rate is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Number 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 770  
PARTIAL REQUIREMENTS SERVICE AT PRIMARY VOLTAGE

Applicable to:

Any customer to whom Chugach is authorized to provide service but is not obligated to provide service (except pursuant to Schedule 700, 750, 760, 770, or 780) and whose peak load in any 12 month period is at least 10 MW. Availability of this service may be terminated by the utility by giving twelve (12) months' advance written notice to the authorized representatives of all customers then taking service and prompt written notice to all persons with pending applications for service under this Schedule 770. Copies of such notices shall also be provided to the Regulatory Commission of Alaska.

Character of Service:

Three phase 60 Hertz alternating current at available transmission or subtransmission voltage (34500Y/19900 volts or above).

Monthly Rate:

Customer Charge: <sup>1</sup>	\$668.42		
Baseload Demand Charge:	\$41.86	per kW of Billing Demand	I
Peaking Demand Charge:	\$41.86	per kW of Billing Demand	I
Energy Charge:	0.515	cents per kWh	I

Minimum Monthly Charge: The customer charge of \$668.42  
Baseload Demand multiplied by the Baseload  
Demand Charge specified above.<sup>1</sup>

<sup>1</sup> If the customer is taking service under more than one rate schedule at a single meter, only one customer charge shall apply

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 770  
(Continued)

Definitions:

1. Metered Total Demand is the maximum average rate of energy use measured over any 15 minute interval during the applicable billing month.
2. Billing Total Demand for any billing month is the greater of (1) Metered Total Demand or (2) 70% of the highest Metered Total Demand recorded during the previous 11 billing months.
3. Baseload Demand is the demand level designated by the customer as Baseload Demand pursuant to paragraph 2 of the Conditions set forth below.
4. Peaking Demand for any billing month is the arithmetic difference derived by subtracting Baseload Demand from Billing Total Demand for such month, or zero, whichever is greater.

Conditions:

1. Chugach may require the customer to enter into a special contract with Chugach that specifies the term of Service and the parties' respective rights upon termination of service. Any such special contract will not become effective until approved by the Regulatory Commission of Alaska ("RCA").
2. The customer must apply for service on a form to be provided by the utility, and in such application, designate the Baseload Demand under this Rate Schedule. The customer may modify the Baseload Demand one time in any 12 month period by providing written notice to Chugach 30 days prior to the effective date of the change. The Baseload Demand may be modified more than one time in a 12 month period if the modification is mutually agreed upon and has no adverse effect on Chugach or its other customers.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 770  
(Continued)

3. The customer may meet its requirements in excess of Baseload Demand through any combination of power purchases from non utility power suppliers and utilities which are authorized by the RCA to make such sales, and power generated by its own facilities. The customer shall provide Chugach with a schedule of its planned generation and purchases from suppliers other than Chugach for each hour of the following day no later than 12:00 noon each day. The customer shall promptly notify Chugach of any changes to such schedule and, except in an emergency, shall not change such schedule for any hour later than 15 minutes prior to the start of that hour.
4. In providing service pursuant to this Rate Schedule, Chugach is not committed to wheel power from any third party to the customer. Any wheeling or ancillary service arrangements between Chugach and the customer related to power purchased by the customer from third-party generation facilities will be by mutually acceptable contract, which must be approved by the RCA prior to taking effect, and independent of this Rate Schedule. The customer will be solely responsible for arranging provision of any wheeling or other services related to such purchase.
5. Operating Reserves: The customer will be responsible for all billing demands arising as a consequence of forced outages of the customer's generation facilities or of failures of power suppliers other than Chugach to deliver power, *provided that* the customer and Chugach may, by mutual agreement, enter into an operating reserve sharing arrangement which will relieve the customer of responsibility for billing demands arising as a consequence of the initial 2 hours of any forced outage or failure of a supplier other than Chugach to deliver power, in consideration of which the customer shall provide Operating Reserves to Chugach meeting the following conditions:
  - a. The customer and Chugach must be interconnected in a manner which, in the sole opinion of Chugach, will make it technically feasible for the customer to supply operating reserves to Chugach.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 770  
(Continued)

- b. The customer must supply to Chugach operating reserves, as defined in ADDENDUM NO. 1 TO THE ALASKA INTERTIE AGREEMENT dated December 23, 1985 and, in particular, SECTIONS A-1.1 *et seq.*, B-2.1 *et seq.*, and B-2.2 *et seq.* which provisions are, by this reference, incorporated herein and made a part of this rate schedule, in an amount that constitutes the same percentage of the customer's generation output as Chugach's operating reserve obligation is of its generation output.
- 7. The customer may terminate its service under this rate schedule by giving 30 days' written notice to Chugach. However, service under Schedule 770 may not be resumed within 12 months of termination by the customer.

Fuel and Purchased Power Cost Adjustment: The Energy Charge is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Number 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 780  
SEASONAL REPLACEMENT SERVICE AT PRIMARY VOLTAGE

Applicable to:

Any customer to whom Chugach is authorized to provide service but is not obligated to provide service (except pursuant to Schedule 700, 750, 760, 770, or 780), and whose peak load in any 12 month period is at least 10 MW, for the purpose of replacing customer owned generation units during maintenance outages during the Summer Season, May through October. Availability of this service may be terminated by the utility by giving twelve (12) months' advance written notice to all customers who are then taking service or whose applications for service pursuant to Condition No. 2 below have been accepted by the utility, and prompt written notice to all persons with pending applications for service, under this Schedule 780. Copies of such notices shall also be provided to the Regulatory Commission of Alaska.

Character of Service:

Three phase 60 Hertz alternating current at available transmission or subtransmission voltage (34500Y/19900 volts or above).

Monthly Rate:

Customer Charge <sup>1</sup>	\$668.42	
Replacement Capacity Charge:	\$41.86 per kW of Replacement Capacity	I
Excess Demand Charge:	The Peaking Demand Charge under Rate Schedule 770 then in effect	
Energy Charge:	0.515 cents per kWh	I
Minimum Monthly Charge:	The customer charge of \$668.42 Replacement Capacity multiplied By the Replacement Capacity Charge specified above. <sup>1</sup>	

<sup>1</sup> If the customer is taking service under more than one rate schedule at a single meter, only one customer charge shall apply

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STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 780  
(Continued)

Definitions:

1. Metered Total Demand is the maximum average rate of energy use measured over any 15 minute interval during the applicable billing month.
2. Billing Total Demand for any month is the greater of (1) Metered Total Demand or (2) Replacement Capacity.
3. Replacement Capacity is the demand level designated by the customer as Replacement Capacity pursuant to paragraph 2 of the Conditions set forth below.
4. Excess Demand is equal to Billing Total Demand less Replacement Capacity, or zero, whichever is greater.

Conditions:

1. Chugach may require the customer to enter into a special contract with Chugach that specifies the term of service and the parties' respective rights upon termination of service. Any such special contract will not become effective until approved by the Regulatory Commission of Alaska ("RCA").
2. The customer must apply for service on a form to be provided by the utility, and in such application, designate the Replacement Capacity under this Rate Schedule. Replacement Capacity must be designated for a period of not less than 1 month and not more than 3 months, and no part of the period may fall outside of the May through October summer season. Chugach may accept or reject the customer's designation of Replacement Capacity and will notify the customer of its decision to accept or reject within 7 days of receiving the customer's application. If Chugach accepts the customer's designation, Chugach shall provide and the customer shall

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 780  
(Continued)

purchase the designated Replacement Capacity pursuant to this rate schedule. The customer may unilaterally reduce the Replacement Capacity one time in any 12 month period by providing 30 days' prior written notice to Chugach. The customer may designate multiple purchases of Replacement Capacity, which Chugach may accept or reject independently of each other.

3. The customer may meet its requirements in excess of the Replacement Capacity through any combination of power purchases from non utility power suppliers and utilities which are authorized by the RCA to make such sales, and power generated by its own facilities. The customer shall provide Chugach with a schedule of its planned generation and purchases from suppliers other than Chugach for each hour of the following day no later than 12:00 noon each day. The customer shall promptly notify Chugach of any changes to such schedule and, except in an emergency, shall not change such schedule for any hour later than 15 minutes prior to the start of that hour.
4. In providing service pursuant to this Rate Schedule, Chugach is not committed to wheel power from any third party to the customer. Any wheeling or ancillary service arrangements between Chugach and the customer related to power purchased by customer from third-party generation facilities will be by mutually acceptable contract, which must be approved by the RCA prior to taking effect, and independent of this Rate Schedule. The customer will be solely responsible for arranging provision of any wheeling or other services related to such purchase.
5. Operating Reserves: The customer will be responsible for all billing demands arising as a consequence of forced outages of the customer's generation facilities or of failures of power suppliers other than Chugach to deliver power, *provided that* the customer and Chugach may, by mutual agreement, enter into an operating reserve sharing arrangement which will relieve the customer of responsibility for billing demands arising as a consequence of the initial 2 hours of any forced outage or failure of a supplier other than Chugach to deliver power in consideration of which the

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

SCHEDULE 780  
(Continued)

customer shall provide Operating Reserves to Chugach meeting the following conditions:

- a. The customer and Chugach must be interconnected in a manner which, in the sole opinion of Chugach, will make it technically feasible for the customer to supply operating reserves to Chugach.
- b. The customer must supply to Chugach operating reserves, as defined in ADDENDUM NO. 1 TO THE ALASKA INTERTIE AGREEMENT Dated December 23, 1985 and, in particular, SECTIONS A-1.1 *et seq.*, B-2.1 *et seq.*, and B-2.2 *et seq.* which provisions are, by this reference, incorporated herein and made a part of this rate schedule, in an amount that constitutes the same percentage of its generation output as Chugach's operating reserve obligation constitutes of Chugach's generation output.

Fuel and Purchased Power Cost Adjustment: The Energy Charge is subject to adjustment on a kilowatt hour basis to recover the cost of power as described on Tariff Sheet Number 68 and 70.

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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Chugach Electric Association, Inc.

## Appendix A

Interconnection and Operating Requirements for Non-Utility Generation  
Up to 5,000 kVa

(Sections 111-114 Revised September, 2016)

**Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)**

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Interconnection and Operating  
Requirements  
For Non-Utility Generation  
Up to 5,000 kVA

2010 EDITION

<http://www.chugachelectric.com>

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**MEETING ANCHORAGE'S ENERGY CHALLENGES  
WITH EFFICIENCY AND NEW TECHNOLOGY**

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STATE OF ALASKA  
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# CHUGACH ELECTRIC ASSOCIATION, INC.

## Interconnection and Operating Requirements For Non-Utility Generation Up to 5,000 kVA

2010 EDITION

Municipality of Anchorage

**FOREWARD**

Interconnection of non-utility generating equipment with Chugach's electric power system involves many complex technical and operational issues. Non-utility owned generators span a wide range of sizes and electrical characteristics, and electrical distribution system design varies from that required to serve the residential customer to that needed to serve the large commercial customer. With so many variations possible, it is very challenging to create an interconnection standard that fits all generation interconnection situations.

In establishing a non-utility generation interconnection standard, two important issues that must be addressed are safety and reliability.

The first and most important issue is safety of the general public and of Chugach's employees working on the electrical systems. This standard establishes the technical requirements that must be met to ensure the safety of the general public and of Chugach's employees. Typically, designing an interconnection system for the safety of the general public will also provide protection for the interconnected equipment.

The second issue is reliability; the non-utility generation system must be designed and interconnected in such a way that system reliability and service quality for all customers connected to Chugach's electric power system are not compromised.

Chugach will strive to maintain quality of service and the safety of the general public, customers, and employees, while facilitating interconnection of non-utility generation equipment where possible.

Lee D. Thibert  
Chief Executive Officer  
Chugach Electric Association, Inc.

**CHUGACH ELECTRIC ASSOCIATION, INC. DEPARTMENT DIRECTORY**

5601 Electron Dr.  
Anchorage, Alaska 99518  
(907) 563-7494 (24 hrs)  
(800) 478-7494

Line Extension Coordinator (new service applications)  
7:30 a.m. to 4:00 p.m., Monday through Friday  
(907) 762-4631

Customer Service Division (billing and account information)  
8:00 a.m. to 5:30 p.m., Monday through Friday  
(907) 563-7366

Engineering Division  
7:00 a.m. to 3:30 p.m., Monday through Friday  
(907) 762-4453

Operations Division  
7:00 a.m. to 3:30 p.m., Monday through Friday  
(907) 762-7655

Metering Section  
7:00 a.m. to 3:30 p.m., Monday through Friday  
(907) 762-7655

**ADDITIONAL IMPORTANT TELEPHONE NUMBERS**

Municipality of Anchorage, Development Services, Building Safety  
General Information and Permits 343-8347

To request an inspection for a project with a permit 343-8300

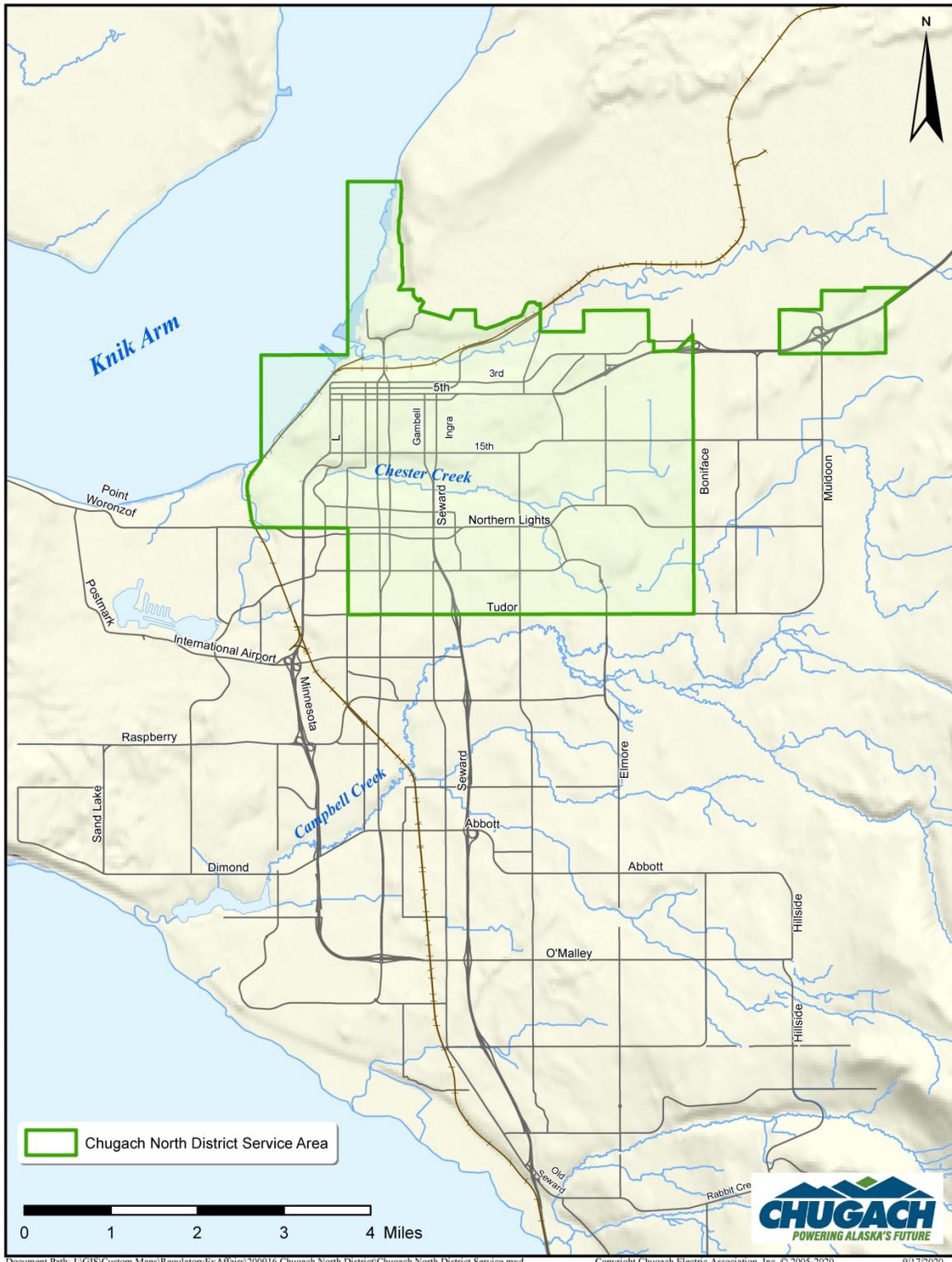
To fax a request for an inspection for a project with a permit 249-7777

Inspection Help Line 343-7962

Lead Electrical Inspector 343-8316

Locate Call Center of Alaska, Inc.  
Anchorage Area (907) 278-3121  
Statewide (800) 478-3121

# Chugach North District Service Area



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**Section 100 - General Information****101 Format and Organization**

Chugach recognizes the desire of some customers to generate their own electricity on-site while maintaining an electrical connection with the Chugach electric power system. Other customers may want to construct and operate non-utility generation facilities and connect it to the area electric power system. These requirements contain the design parameters, equipment specifications, and technical operating parameters for interconnecting non-utility generation to the Chugach electric power system. Summaries for each section of this document are presented below.

**General Information - Section 100**

Section 100 provides an Overview of Chugach's operating policy regarding proposals for interconnecting non-utility generation with the Chugach electric power system. This section contains key information regarding operational concepts and characteristics for both separate operating and parallel operating systems. To help customers understand Chugach's classification system, this section also provides general descriptions and definitions of the different classes of interconnected non-utility generation, as defined for the purposes of these requirements.

**Process and Application Procedures - Section 200**

Section 200 sets forth the step-by-step process through which specific requirements for safe and reliable interconnection is determined and implemented. While each proposal will be unique in its characteristics, this section provides the applicant with an understanding of how applications are processed, how specific interconnection requirements are assessed, the process by which projects are coordinated with Chugach, and the means to obtain authorization for interconnected operation. Applications for interconnection are included as appendices to these requirements.

**System Design Requirements - Section 300**

Section 300 describes necessary information on design documentation as well as required drawings for interconnecting non-utility generation. Also, included is information regarding protective systems, Chugach electric power system information, and general information on induction generators and on power converter systems. Finally, Section 300 provides information on national and local standards, codes, and compliance requirements.

**Generation and Interconnection Equipment Specifications - Section 400**

Section 400 addresses equipment specifications and design requirements for interconnecting non-utility generation facilities with the Chugach electric power system. Included in Section 400 are specific requirements for each class non-utility generating facilities.

**Generation and Interconnection Operating Requirements - Section 500**

Section 500 contains information on general operating requirements, the specifics of parallel operation, and islanded operations. Also addressed in Section 500 are details regarding insurance, voltage levels, voltage regulation, reactive power, harmonic distortion, system protection coordination, functional testing, and equipment maintenance.

**Section 100 - General Information****102 Operational Policy for Interconnected Non-Utility Generation**

Chugach's policy is to assist its customers with the installation and operation of non-utility generation resources intended to operate in parallel with the Chugach electric power system, provided this can be done without adverse effects to Chugach's other customers, personnel, equipment or system operations.

The purpose of Chugach's interconnection procedures is to provide a thorough but expedient method by which the applicant can be authorized to safely and reliably interconnect with the Chugach electric power system.

In these requirements, interconnection is defined as the electrical connection of non-utility generation facilities with the Chugach electric power system, either directly to Chugach's facilities, or through the customer's load. As used in this document, non-utility generation is defined as any electrical generation source not owned or operated by Chugach. Non-utility generating facilities can be classified as either separate or parallel operating systems. Separate operation denotes operating generation without the capability of sending power to, or receiving power from the Chugach system. Parallel operation is the condition where non-utility generation operates while electrically connected to the Chugach system; under this condition, electric power can flow either from the Chugach system to the non-utility facility or vice versa.

Within these requirements, the term "producer" is used to refer to the owner(s) of non-utility generating facilities, or agents acting on their behalf, who have been authorized by Chugach to interconnect and operate generation in parallel with the Chugach electric power system. Also in these requirements, an "applicant" is defined as an individual or party who has applied for the interconnection of non-utility generation with the Chugach electric power system.

The operation of non-utility generation in parallel with the electrical supply grid poses important safety concerns for Chugach personnel and equipment, and poses safety and reliability concerns for Chugach's customers and the general public. Accordingly, any interconnected non-utility generating facility must meet all applicable federal, state, and local safety codes and regulations, in addition to the specific details contained in these requirements. Chugach strongly recommends (and in some cases, may require) that those applying for interconnection obtain the services of an engineering professional, expert in the design of wiring and protection systems, including control and protection systems for generating equipment interconnected with electric grids.

Electrical distribution systems are inherently complex; each proposal to interconnect to the system will be unique in geographic location, operational characteristics, and impact to the electrical grid. All proposals must therefore be analyzed to determine the specific technical operating criteria and utility interface requirements.

Chugach requires general liability insurance for all non-utility generation facilities. Refer to Section 502 for specific details regarding insurance coverage. Proof of insurance is required before Chugach will authorize connection and operation of non-utility generating equipment.

**Section 100 - General Information****103 Transfer of Ownership**

A producer's non-utility generation facility is transferrable to other parties only after Chugach has been notified and the party receiving the non-utility generation facility has executed a final letter of agreement with Chugach. If transfer of ownership takes place prior to execution of a letter of agreement with the party receiving ownership, the non-utility generating equipment will be disconnected from Chugach's electric power system.

**104 Relocation of Non-Utility Generating Equipment**

Once an applicant executes a final letter of agreement to operate non-utility generating equipment, authorization to operate that equipment only extends to the location or premises stated in the application. If a producer (owner) relocates non-utility generating equipment to another location or premises, a new application must be submitted and a subsequent final letter of agreement be executed prior to interconnecting with Chugach's electric power system.

**105 Access to Producer's Premises**

A properly identified employee of Chugach shall have access to the premises of the producer at all times. Except as required for the safe and efficient operation of its facilities, Chugach will endeavor to avoid accessing the producer's premises at unusual or disruptive times.

If a producer fails to provide required access, the producer will be notified of the denial of access and will be given time to remedy the access problem consistent with the nature of the problem (e.g. safety hazard, emergency, non-emergency, etc.). Failure to remedy the access problem within the time specified may result in disconnection of electric service until such time as access is restored.

The requirement for access to a producer's premises applies to all classes and subclasses of non-utility generation installations. Refer to the glossary on page 85 for the definition of "Access".

**106 Separate Operation**

The information contained in interconnection and operating requirements generally does not apply to "separate operating" non-utility generating systems. Typically, separate operating systems are small emergency generating units for residential use or certain uninterruptible power systems (UPS), which do not energize the Chugach system in their normal course of operation.

Within the context of these requirements, a "separate operating" system is defined as a generating system which has no capability to connect and operate in parallel with the Chugach system. Generally, a separate system is comprised of power generating equipment and switching apparatus located on the owner's site or property, which are designed and intended for use as an emergency, stand-by, or stand-alone power system. Chugach requires that these systems transfer load (either from the Chugach system to the customer's separate system, or vice-versa) via open-transition switching.

**Section 100 - General Information**

For separate systems, which utilize open-transition switching, the specifications in these requirements do not apply. Standards and specifications for such systems can be found in Chugach's Electric Service Requirements. Open-transition switching is accomplished by employing either an automatic or manual transfer switch which does not allow the customer's generation equipment to be electrically connected with the Chugach system (i.e., breaks contact with one source before the making contact with the other). Open-transition switching ensures that the customer's generation equipment will be electrically disconnected prior to transferring the customer's load to or from the Chugach supply and electrical system.

Most uninterruptible power supply (UPS) systems do not specifically meet the separate system criteria. However, if they are not capable of back feed into the Chugach system, they can be classified as a separate system. If back feed is possible for such a system, it must meet Chugach's requirements for parallel operation. If there is a question about whether the applicant has a separate system, Chugach will review the transfer scheme and advise as to whether it meets the open-transition requirements. This review may include approval of drawings and equipment specifications, as well as field inspection of the transfer equipment.

**107 Parallel Operation**

Parallel operation is defined as a condition where non-utility generation operates while electrically connected to the Chugach electric power system. Under this condition, electric power can flow from the Chugach system to the producer's facility or from the producer's facility into the Chugach system. In other words, bi-directional (two-way) power flow between the two systems is possible under this operating condition.

For the parallel operation of a non-utility generation facility, the interconnection must be implemented in such a way that system disturbances do not result in portions of the Chugach system becoming islanded with the producer's facility,

**108 Islanding**

Within the context of these requirements, islanded or islanding operation denotes the condition where the producer's generation energizes a portion of the Chugach electric power system that has become electrically separated from the rest of Chugach's system. For safety and quality reasons, no producer may island any portion of the Chugach system, unless given express approval and authorization by Chugach (see Section 504: Islanded Operations).

Significant concerns exist regarding the possible dangers to which Chugach personnel may be exposed under islanded conditions. Chugach's line crews must have the assurance that any section of the Chugach system is de-energized prior to work and will not be re-energized until there is confirmation that they are physically clear of the system. Under an islanded condition, Chugach cannot provide assurance to its personnel that all portions of the island are de-energized.

Another important concern is the responsibility Chugach has to deliver electrical service within the proper ranges (voltage, frequency, etc.) to its customers. If a portion of the Chugach system were to become islanded and energized by non-Chugach generation, Chugach would not be able to control the quality, safety, and integrity of the electrical service delivered to its customers.

**Section 100 - General Information****109 Classification of Non-Utility Generation Installations**

In order to evaluate proposed interconnections to its electrical power system, Chugach has developed four (4) classes of non-utility generators identified as Class A, B, C, and D and a subclass for net-metered generators identified as Class A - NET. This classification system is based on the generators' potential to affect the grid and follows industry-accepted methodology. Criteria for classification includes the maximum capacity of the facility (output capacity in kVA), the type of generating system and its characteristics (synchronous generator, induction generator, power converter system, etc.), the stiffness ratio of the facility in relation to the Chugach electrical system, and system electrical characteristics at the point of interconnection.

Stiffness ratio is a measure used to determine the potential impact of non-utility generating equipment on the system at the point of interconnection. The stiffness ratio is the ratio of the available electric system fault current at the point of interconnection to the maximum rated current of the producer's facility. Used throughout the industry, this ratio indicates the capability of a particular generator to influence system voltages and operating characteristics. For any given point on the electric power system, the higher the ratio, the lower the probability that the producer may contribute to system disturbances or adversely affect nominal system voltage levels. Refer to IEEE Std. 1547.2-2008, Part 3.1.7 and 3.1.8 for details on stiffness ratio.

To obtain the minimum interconnection equipment requirements associated with a particular class of facility, please refer to the applicable requirements in Section 400.

**110 Class A - NET Facilities**

Non-utility generator installations of 25 kVA output or less, where the system stiffness ratio is at least 100, and which qualify under State of Alaska Net Metering Standards (3 AAC 50.900 - 50.949) and rule 10 of Chugach's effective tariff, are Class A - NET installations. Eligibility for the Class A - NET classification can be found in the State of Alaska Net Metering Standards, 3 AAC 50.920. Interconnection requirements for Class A - NET installations are typically the least difficult of all the classes.

In general, a Class A - NET installation is a small on-site power supply facility and is not expected to affect Chugach's primarily electrical distribution feeder devices. Class A - NET installations are usually not capable of significantly altering local voltages on adjacent distribution facilities, and the relatively small capacity generators are not capable of supporting large islands on the primary electrical system.

Class A - NET installations may be connected to the producer's load(s) so that all, or a portion of the producer's non-utility generation equipment can serve the producer's load(s) which would normally be served by Chugach.

**Section 100 - General Information****111 Class A Facilities**

Non-utility generator installations of 25 kVA output or less, where the system stiffness ratio is at least 100, are Class A installations. Interconnection requirements for Class A installations are typically the least difficult of all the classes.

In general, Class A installations are small on-site power supply applications and are not expected to affect Chugach primary electrical distribution feeder devices. Class A installations are usually not capable of significantly altering local voltages on adjacent distribution facilities, and the relatively small capacity generators are not capable of supporting large islands on the primary electrical system.

**112 Class B Facilities**

Non-utility generator installations from 25 kVA to 100 kVA, where the stiffness ratio is at least 50, are Class B installations.

As with Class A installations, the probability of interference with Chugach customers and electrical distribution system equipment is relatively low, but the risk is sufficient to warrant additional interconnection requirements. Class B installations generally do not significantly influence primary electrical feeder devices but can alter primary and/or secondary voltages.

**113 Class C Facilities**

Non-utility generator installations from 100 kVA to 1,000 kVA, where the stiffness ratio is at least 30, are Class C installations. The larger capacity of Class C facilities (relative to Classes A and B), and the consequent potential to island large sections of the Chugach electric system is of much greater concern. In addition, Class C installations can significantly influence primary feeder devices and operations.

(Revised September, 2016)

**Section 100 - General Information****114 Class D Facilities**

Non-utility generator installations from 1,000 kVA to 5,000 kVA, where the stiffness ratio is at least 20, are Class D installations. Installations of this size and available fault contribution can present a major risk to system safety and operations. The effect on Chugach's system voltage and equipment, whether constant or transient, can be serious. Due to the capacity of Class D facilities, islanding is a major concern. Class D installations require detailed and careful system studies to determine the amount and degree of interconnection and interface requirements, as they are capable of having a major influence on the Chugach connecting feeder(s), adjacent feeders, and substations.

(Revised September, 2016)

**Section 200 - Application Process****201 Objectives**

This portion of the interconnection requirements contains an overview of the process and procedures necessary to interconnect producer-owned generation with the Chugach system. It also provides both administrative and technical guidelines to assist the applicant in obtaining interconnection with the Chugach electrical system in an efficient and consistent manner.

A producer intending to operate generation in parallel with the Chugach system must complete an "Application for Non-Utility Generation." The time required to complete the application process generally depends on the complexity of the proposed project. The applicant must provide Chugach with a complete design package, so that Chugach may classify the generating system, review the interconnection facilities, and analyze the impact of the proposed interconnection on the Chugach system. Projects using previously submitted designs, which have been satisfactorily "type-tested", usually move through the process steps more quickly. Several of the process steps may be satisfied with an initial application, depending on the detail and completeness of the application and supporting documentation submitted by the applicant. However, proposed, type-tested systems do not eliminate the requirement that the applicant provide Chugach with a complete design package.

**202 Process Review and Responsibilities**

The following description of the process and application procedures is designed to help the applicant understand the information required and the steps necessary to enable Chugach to review the applicant's proposal and provide authorization for interconnection in a reasonable and expeditious manner.

**203 Cost Reimbursement**

Chugach will estimate its costs related to the applicant's proposed interconnection, excluding the cost of additional metering for net metering consumers. The applicant shall be responsible for full payment of the costs Chugach would not have incurred but for the applicant's interconnection.

**Section 200 - Application Process**

**204 Step 1: Preliminary Coordination & Application**

Procedure	Description	Estimated Duration
<p>A. Initial Communication</p>	<p>The initial communication may be as brief and informal as a general inquiry via telephone, to a scheduled appointment with Chugach for general discussion and submittal of all initial application.</p> <p>To schedule an appointment, contact the Service Extension Coordinator in Chugach 's Engineering Division.</p>	<p>The initial communication typically takes one (1) day.</p>
<p>B. Data Collection</p>	<p>From the initial communication, or subsequent meetings with Chugach, the applicant should have a clear definition of the required technical data and information regarding the proposed interconnection. To help expedite application processing, Chugach will also provide guidance as to whether both the initial and final applications should be submitted before commencement of application processing.</p> <p>Please note that additional information may become required during Step 2: Application Processing. If required, Chugach will coordinate with the applicant, in an expedient manner, to resolve any additional information issues.</p>	<p>Data collection duration is variable, depending on the project and/or class of the proposed facility.</p>
<p>C. Application Submittal and Review</p>	<p>When the applicant files the completed application, Chugach will perform a brief review of the application to determine if any additional information is required.</p> <p>The applicant shall be responsible for payment of any processing fees, as determined by Chugach Engineering, to cover Chugach's administrative costs.</p> <p>Within five business days of receiving the application(s), Chugach will respond in writing, via letter or e-mail, to the applicant, noting receipt of the application. If no discrepancies are noted, application processing will begin upon receipt of processing fees from the applicant.</p>	<p>Application submittal and review typically takes five (5) business days.</p>

**Section 200 - Application Process**

**205 Step 2: Application Processing**

<b>Procedure</b>	<b>Description</b>	<b>Estimated Duration</b>
A. Application Processing for Class A and B Facilities	Application processing generally involves: a) Payment of processing fees (see Step 1, C). b) Performance of system analyses and studies, as required, to assess specific interconnection requirements and system modifications; c) Determination of facility-specific operating parameters. d) Assessment of any specific requirements in addition to the general requirements outlined in the interconnection requirements.	Application processing for Class A and Class B facilities typically does not exceed thirty (30) calendar days.
B. Application Processing for Class C and D Facilities	Application processing generally involves: a) Payment of processing fees (see Step 1, C). b) Performance of system analyses and studies, as required, to assess specific interconnection requirements and system modifications; c) Determination of facility-specific operating parameters; d) Determination of specific telemetry and control requirements; e) Review and assessment of applicable code and standards issues associated with the proposed interconnection.	Application processing for Class C and Class D facilities typically does not exceed forty-two (42) calendar days.
C. Response to Application	Chugach will provide a written response regarding the proposed interconnection. This will include notice of any facility-specific interconnection requirements, and will address any outstanding issues or cost items, for which the applicant may be responsible.	Chugach's written response to the application typically does not exceed seven (7) calendar days after application processing is complete.

**Section 200 - Application Process**

**206 Step 3: Interconnection Design Review & Coordination**

<b>Procedure</b>	<b>Description</b>	<b>Estimated Duration</b>
A. Submit a Draft of the Final Design	The applicant shall develop a draft of the final interconnection design based on the information in Chugach’s Response to Application and submit it to Chugach for review and coordination to develop the final design.	Duration is variable and dependent upon the applicant.
B. Final Design Review and Coordination	<p>This procedure involves Chugach’s review and coordination of the submitted final design.</p> <p>If system modifications are necessary to accommodate the proposed interconnection, a Chugach work order will be initiated to perform these modifications. A preliminary cost estimate will be provided to the applicant prior to finalization of the work order design.</p> <p>After Chugach approves the final interconnection design, a preliminary letter of agreement can be executed between the applicant and Chugach. Once a preliminary letter of agreement is signed, construction may proceed.</p>	Duration is variable and dependent upon the scope of the project.

**Section 200 - Application Process**

**207 Step 4: Construction, Inspection, and Acceptance**

<b>Procedure</b>	<b>Description</b>	<b>Estimated Duration</b>
A. Preliminary Letter of Agreement	With Chugach’s approval of the applicant’s final design and written agreement that the applicant will bear all costs associated with Chugach system modifications, Chugach will authorize construction of the interconnection via a preliminary letter of agreement. This agreement will allow the applicant to proceed with construction and to perform subsequent testing to ensure that the interconnection is safe, adequate, and reliable.	Duration is variable and dependent upon both parties.
B. Construction and Final Inspection	The applicant may proceed with interconnection facility construction, coordinating with Chugach for periodic inspections, and final facility inspection. Periodic inspections (and final inspection) will be performed at the discretion of Chugach to ensure that that the interconnection facilities meet the specifications of the approved final design.	Duration is variable and dependent upon both parties.
C. Final Acceptance and Cost Reconciliation	Following the completion of interconnection facility construction, Chugach will proceed with functional acceptance testing of the interconnection facilities, as necessary, to ensure that the protection system set points, synchronizing capabilities, and power quality are acceptable under the full range of facility operating characteristics.  Prior to executing a final letter of agreement, the applicant shall reimburse Chugach for all costs associated with application processing, and/or system modification work orders.	Duration is variable and dependent upon both parties.
D. Proof of Insurance	The applicant shall provide Chugach with proof of general liability insurance.	Duration is dependent upon the applicant.
E. Final Letter of Agreement	With completion of a final letter of agreement and cost reconciliation, the final agreement allowing connection and operation of the facility may be executed between the applicant and Chugach.	Duration is variable and dependent upon both parties.

**Section 300 - General System Design Requirements****301 Design Documentation and Information**

For Chugach review and reference purpose, the producer shall submit the following information and design documentation with the interconnection application(s) (Refer to Appendix A, Appendix B, or Appendix C: Applications for Interconnection). For smaller class facilities, some submittal requirements may be waived at Chugach's discretion. All of the producer's interconnection final design plans and drawings shall be sealed by an electrical engineer, registered and recognized as a Professional Engineer in the State of Alaska.

**A. One-Line Diagram**

This is an electrical drawing with sufficient detail to show the major elements of the facility electrical connections, interconnection and protective equipment, and point of interconnection to the Chugach electric power system. The diagram must include the following where applicable:

- Generating equipment
- Conductor types, sizes, and bus electrical ratings
- Apparatus KVA and voltage ratings
- Metering points and instrument transformers (as applicable)
- Interconnection transformer
- Relays and circuit breakers/interrupting devices
- Switchgear (as applicable)
- Utility device and map point at the point of interconnection

**B. Three-Line Diagram (as required)**

This electrical drawing shall represent all three phases and neutral connections of the interconnected facility circuits, showing potential transformer (PT) and current transformer (CT) ratios and details of their configuration, including relays, meters, and test switches.

**C. Relay, Metering, and Telemetry Functional Drawing**

This diagram shall indicate the functions of the individual relays, metering, and Telemetry equipment, if any. For smaller generator installations such as some Class A and Class A - NET facilities, the one-line diagram and the functional diagram may be combined.

Section 300 - General System Design Requirements**D. Paralleling Device Control Drawings**

These drawings shall show the conditions, relays, and instrument transformers that cause all switches and/or circuit breakers applied to the interconnecting facility to open or close. The source of power for each control and/or protective device shall be clearly indicated in the drawings. Control drawings for Class A and Class A - NET facilities may be incorporated in the one-line diagram.

**E. Facility Grounding Drawings**

These drawings shall indicate ground wire sizes, bonding, and connections, as well as the number, size, and type of electrodes, and spacing. The producer's grounding scheme shall conform to IEEE Std. 1547, Part 4.1.2: Integration with Area EPS Grounding.

In addition to the above, the producer shall provide to Chugach any additional design information or documents pertaining to the interconnected facility, as requested.

**302 Protective Systems and Equipment**

Control and protection design for facilities proposed to operate in parallel with the Chugach system must be approved by Chugach prior to approval for interconnection with the Chugach electric power system.

The specific design of the protection system depends on the generator type, size, and other site-specific considerations. The producer shall meet Chugach requirements, and all designs and equipment shall conform to the National Electrical Code, the National Electrical Safety Code, IEEE standards, and all federal, state, local, and municipal codes. Refer to Section 307 for a list of applicable nationally recognized standards.

When proposing protective devices for the protection of the Chugach system, the applicant shall submit a single-line drawing of this equipment to Chugach for approval of the interconnection protective functions and equipment (see Section 301: Design Documentation and Information). Any changes required by Chugach must be made prior to final acceptance, and Chugach must be provided with dated copies of the final drawings. **To eliminate unnecessary costs and delays, the final design should be submitted to, and approved by Chugach prior to ordering equipment and the commencement of construction.**

Chugach will approve only those portions of the producer's system designs, which apply to the interconnection with, and protection of, the Chugach system. Chugach may comment on other areas, which appear to be incorrect or deficient, but will not assume responsibility for the correctness of protection pertaining to the producer's system.

In order to gain approval for interconnected operation, at the completion of construction, the producer shall demonstrate to Chugach conformance to the testing specifications and requirements contained in IEEE Standards 1547 and 1547.1 for all protective and control systems associated with the producer's interconnection equipment. The producer shall provide documentation of test results, protective relay settings, and control system settings to Chugach.

**Section 300 - General System Design Requirements****303 Chugach System Modifications**

Any modification to the Chugach electric grid, such as the installation of additional equipment, reconductoring of all or a portion of the connecting Chugach line, or reconfiguration of Chugach protection systems necessary to permit parallel operation with the Chugach electric distribution system, will be performed by Chugach.

Where such Chugach system modifications are required to allow interconnection of the producer's facilities, Chugach will perform these modifications, at the producer's expense, providing all necessary labor, materials, and equipment.

**304 Standard System Voltages**

Chugach's standard system voltages conform to ANSI C84.1 standards and are outlined as follows. All distribution circuits, both secondary and primary, are effectively grounded. Specific voltage requirements and limits for the producer's generating equipment are described in Section 5: Interconnected Operating Requirements.

- Distribution Secondary Voltages:
  - Single-phase, 120/240 volts, 3-wire
  - Single-phase, 240/480 volts, 3-wire
  - Three-phase, 120/208 volts, 4-wire, grounded wye
  - Three-phase, 277/480 volts, 4-wire, grounded wye
- Distribution Primary Voltages:
  - Single-phase, 7200 volts
  - Three-phase, 2,400/4,160 volts, 4-wire, grounded wye
  - Three-phase, 7,200/12,470 volts, 4-wire, grounded wye
  - Three-phase, 19,920/34,500 volts, 4-wire, grounded wye
- Transmission Voltages:
  - 34,500 volts, three-phase
  - 115,000 volts, three-phase

**Section 300 - General System Design Requirements****305 Induction Generators**

Induction generators require varying amounts of reactive electric power (VARs) in order to produce real electric power (watts). Due to this consumption (or absorption) of VARs, induction generators inherently operate at leading power factors. The producer shall provide all reactive support or compensation required to maintain power factors within the limits specified in Section 509: Power Factor Requirements, when operating in parallel with the Chugach electric power system. Reactive support for required power factor correction may be provided by the producer's installation of Chugach approved reactive compensation devices, or through contractual agreement with Chugach to provide ancillary services to the producer.

**306 Power Converter Systems**

Reactive power supply requirements for converter systems are similar to those for induction generators, and the general guidelines discussed in Section 305 apply.

Chugach requires that power converter systems conform to the requirements contained in IEEE Standard 1547 and 1547.1, and that such systems for interconnected generation sources meet the recommended limits for current, voltage, and harmonic distortion contained in IEEE Std. 519, Sections 10 and 11. If the producer's converter system(s) is found to interfere with the Chugach electric grid, Chugach customers, or other power producers, the producer may be required to install adequate electrical filtering to bring the voltage and current outputs to acceptable levels. Converters that have been tested and certified by an independent laboratory, such as Underwriters' Laboratories (UL), to be non-islanding, and meet the recommended limits contained in IEEE Std. 519, Sections 10 and 11, may be interconnected to the Chugach system without modifications or farther certifications.

For units rated less than 100 kW, it is acceptable to have the frequency and voltage protective functions built into the electronics of the converter only if the set points of those functions meet IEEE Standard 1547 criteria, are tamperproof, and can be easily and reliably tested. Acceptability, conformance with IEEE 1547 criteria, and ease and reliability of testing will be determined by Chugach.

**307 Compliance with Nationally Recognized Standards**

Chugach requires that all non-utility generation capable of electrical connection to the Chugach electric power system comply with the applicable and pertinent sections of the following nationally recognized codes and standards:

- IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems
- IEEE 1547.1 Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems
- IEEE 1547.2 Application Guide for IEEE 1547
- IEEE 1547.3 Guide for Monitoring, Information Exchange, and Control of Distributed Resources Interconnected with Electric Power Systems
- IEEE 929 Recommended Practice for Utility Interface of Photovoltaic (PV) Systems

**Section 300 - General System Design Requirements**

- IEEE 519 Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems
- UL 1741 Standard for Inverters, Converters, Controllers, and Interconnection System Equipment for use with Distributed Energy Resources

Compliance with UL 1741 for inverters, converters, controllers, and interconnection system equipment used with non-utility generators shall be by means of the manufacturer's nameplate information or other manufacturer documentation approved by Chugach. Field evaluation and subsequent listing of such equipment is not acceptable.

**308 Compliance with Codes and Ordinances**

Construction of new or remodeled installations must conform to current and applicable provisions of the National Electrical Code (NEC), the National Electrical Safety Code (NESC), federal, state, and municipal codes, regulations and ordinances, the Chugach Tariff, and Chugach's Electric Service Requirements. Chugach personnel are not authorized to waive federal, state or municipal regulations.

When additions, changes, or modifications to premise wiring occurs in conjunction with the installation of interconnected non-utility generating equipment, a current MOA electrical inspection shall be required prior to interconnection.

Information and/or questions about the National Electrical Code should be directed to the Municipality of Anchorage, Development Services, Building Safety Plan Review Engineer, or to the Lead Electrical Inspector.

Where there is a conflict between Chugach's Tariff and this book, the Tariff shall take precedence. Codes, ordinances, and regulations are available from several sources. Chugach's Tariff is available for customer inspection at Chugach's office.

**Section 400 - Equipment Specifications and Design Requirements****401 Introduction and Overview**

This section outlines minimum interconnection requirements for each class of producer-owned facilities. At a minimum, Chugach requires that all of the producer's interconnection equipment and facilities meet the requirements contained within IEEE Std. 1547, Part 4.1: General Requirements. This section also provides general descriptions of the components, including functionality, purpose, and responsibilities of both the producer and Chugach regarding ownership, installation, and maintenance. Specific requirements for each classification of producer-owned interconnected generation equipment can be found in Sections 415 through 419.

**402 General Metering Requirements**

Chugach requires "Bi-directional metering" for all classes of non-utility generation installations. Bi-directional metering enables Chugach to accurately measure and record the real energy flows (watt-hours) delivered to and received from a producer's facility. Chugach will provide all meters used for revenue purposes at its expense. Chugach's bi-directional meters will have measurement capability that includes a separate register for delivered power and a separate register for received power. Depending upon the specific application, Chugach's meters may also include the following:

- Demand measurement
- Load Profile recording
- Time-of-use registers
- Reactive (VAR) measurement

It is the producer's responsibility to provide, install, and maintain all facilities necessary to accommodate Chugach's metering. Necessary facilities include service entrance equipment such as meter sockets, meter disconnect devices, CT cabinets, service termination enclosures, and related equipment.

All service entrance equipment must comply with the most recent edition of Chugach's Electric Service Requirements.

**403 Generator Output Metering Requirements**

Chugach requires the separate measurement of the output of non-utility generating equipment for all classes of facilities except for Class A - NET facilities. Separate measurement of a generator's output may require a generator output meter in addition to the bi-directional meter.

In most cases, the bi-directional meter installed at the point of interconnection will meet the requirement for generator output metering. However, depending on the design and configuration of a producer's facilities, a separate metering point for generator output metering may be required.

When required, the generator output meter shall measure the output of the producer's generator ahead of any loads connected to the generator.

Chugach will provide the generator output meter when required; the producer shall provide all necessary metering and service equipment related to the generator output meter (i.e. meter sockets, CT cabinets, etc.)

**Section 400 - Equipment Specifications and Design Requirements****404 Interconnection Paralleling Device Requirements**

The term “interconnection paralleling device” as used in these requirements is defined as the switchgear or circuit breaker, which is controlled by the producer’s interconnection control system. An interconnection paralleling device is part of the producer’s facilities and establishes the physical electrical connection for parallel operation with the Chugach electric power system.

Chugach requires approved switchgear or circuit breaker(s) (paralleling devices) to allow separation of the producer’s generating equipment from the Chugach electric power system during system disturbances.

Paralleling devices must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection as required by IEEE Std. 1547, Part 4.1.8.3.

Paralleling devices for all classes must have sufficient interrupting capacity to interrupt the maximum available fault current at a particular location.

**405 Interconnection Disconnect Device Requirements**

The term “interconnection disconnect device” as used in these requirements is defined as a manually operated switch for the exclusive use of Chugach to physically isolate non-utility generating equipment from Chugach’s electric power system. For the purposes of these requirements, the term “external disconnect switch” or “EDS” is synonymous with the term “interconnection disconnect device”.

Chugach requires the producer to install a manual interconnection disconnect device as a means of electrically isolating the producer’s non-utility generating facility from the Chugach system and establishing working clearances for maintenance and repair work in accordance with Chugach safety rules and practices.

The manual interconnection disconnect device shall be lockable and readily accessible by Chugach personnel as required by Section 105, and provide visible verification of disconnection from Chugach’s electric power system.

The manual interconnection disconnect device shall be located on the Chugach side of the producer’s generating equipment. The producer shall furnish and install the device and assume ownership and maintenance responsibilities. Only devices specifically approved by Chugach shall be used.

The manual interconnection disconnect device shall be physically located at a location approved by Chugach for ease of access and visibility to Chugach personnel. The disconnect device shall be identified with a Chugach-designated device number.

The manual interconnection disconnect device shall not be used by the producer to make or break parallels between the Chugach system and the producer’s generator(s). The device enclosure and operating handle (when present) must be kept locked at all times by Chugach.

A power-operable interconnection disconnect device may be used on Class C and Class D facilities under some circumstances with approval from Chugach. Where a power-operable disconnect device is used, it shall have manual over-ride capability in the event of a supply failure or equipment malfunction

An interconnection disconnect device is required for all classes of non-utility generation facilities.

**Section 400 - Equipment Specifications and Design Requirements**

The manual interconnection disconnect device shall be placed between the producer's non-utility generating equipment and Chugach's metering equipment.

Chugach strongly recommends that the interconnection disconnect device for Class A - NET facilities be placed between the non-utility generating equipment and the producer's loads. However, at the producer's option, the manual interconnection disconnect device may be placed between the producer's interconnection paralleling device and Chugach's metering equipment. Those Class A - NET facilities that place the interconnection disconnect device between the producer's generating equipment and the producer's loads enable utility service to continue serving those loads in some cases where the generating equipment must be separated from the producer's loads and/or Chugach's system.

Interconnection disconnect devices shall meet the following minimum requirements:

- The disconnect device shall be placed near the facility metering at an approved location;
- The disconnect device shall be externally operable without exposing the operator to contact with live parts and, if power-operable, of a type that can be opened manually in the event of a supply failure;
- The disconnect device shall provide a visible-break indication, showing whether switch contacts are in the open or closed position;
- The disconnect device shall be rated not less than the anticipated load and available fault current;
- The disconnect device shall be rated for the voltage of the circuit on which it is installed;
- Disconnect devices energized from both sides shall have markings indicating that all contacts of the disconnect equipment may be energized;
- The disconnect device shall be gang-operated, opening all up-grounded conductors;
- The disconnect device shall be housed in an enclosure suitable for the location as determined by Chugach;
- The disconnect device shall be lockable in both the open and closed positions by means of a padlock with a shackle diameter of 5/16 inches or greater.

**Section 400 - Equipment Specifications and Design Requirements****406 Interconnection Transformers**

The function of an interconnection transformer is to interconnect a producer's non-utility generation facilities to the Chugach electric power system.

A dedicated interconnection transformer is defined in these requirements as a transformer that is dedicated to serving a producer's facility exclusively; no other Chugach customers shall be connected to a dedicated interconnection transformer.

One purpose of a dedicated interconnection transformer is to minimize any adverse impacts to Chugach's customers which may result from parallel operation of non-utility generation facilities. When power quality problems or service interruptions related to non-utility generation facilities develop and affect other Chugach customers, a dedicated interconnection transformer may be required.

Class A - NET, Class A, and Class B installations do not usually require a dedicated interconnection transformer. However, each application for interconnection to Chugach's system will be evaluated on an individual basis. Under certain circumstances, a dedicated interconnection transformer may be required on Class A - NET, Class A, and Class B installations; examples of such circumstances include but are not limited to the following:

- The producer's total rated generating capacity is at or above the rating of the existing Chugach transformer serving the producer's facilities.
- The producer's electrical system characteristics differ from Chugach's standard system-voltages and configurations (Refer to Section 304: Standard System Voltages).
- The producer's facility adversely impacts the quality of power delivered to adjacent customers on Chugach's system (Refer to Section 500: Interconnected Operating Requirements).

Class C and D facilities require a dedicated interconnection transformer in all cases. Where the installation of a dedicated interconnection transformer is required, the producer shall be responsible for all labor and material costs associated with the installation. Where a Chugach transformer already exists and serves no customers other than the producer's facilities, an additional interconnection transformer may not be required.

In those circumstances where the producer provides the dedicated interconnection transformer and when circumstances require the non-utility generator to be out of service, the producer shall disconnect the interconnection transformer from the Chugach electric power system.

**Section 400 - Equipment Specifications and Design Requirements****407 Protection and Control Devices**

Certain protective functions and control equipment are necessary to ensure both the safety and the reliability of the Chugach electric power system. While the producer is responsible for the installation and maintenance of such equipment, it should be noted that the required equipment outlined in this section applies only to the protection of the Chugach system, not the producer's facilities. Typically, the minimum protective and control equipment requirements for all classifications of producer-owned facilities are as follows:

1. Paralleling Device (controlled switchgear and/or circuit breaker)
2. Anti-Islanding Protective Functions
  - a) Overvoltage Protective Relaying
  - b) Under-voltage Protective Relaying
  - c) Over-frequency Protective Relaying
  - d) Under-frequency Protective Relaying
3. Synchronization Protection:
  - a) Synchronous Generators: Automatic Synchronizing with Relay Supervision
  - b) Induction Generators: Speed Matching Relaying
  - c) Power Converter Systems: Conform to IEEE Standard 1547, Parts 4.1.3 and 5.1.2.C.

Due to the impact that large facilities can have on the Chugach system, additional requirements may be necessary for such facilities, including but not limited to:

1. System Fault Protection Functions
  - a) Ground Overcurrent Protective Relaying
  - b) Phase-fault Protective Relaying
2. Transfer Trip Capability
3. Export Power Control Equipment
  - a) Voltage Regulator/Power Factor Controller
  - b) Direct Digital Control (Chugach SCADA Control)
  - c) Power System Stabilizer

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**Section 400 - Equipment Specifications and Design Requirements**

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Section 400 - Equipment Specifications and Design Requirements**408 Over/Under Voltage Protection**

The table below applies to all classes of non-utility generation equipment. However, clearing times may represent maximum clearing time or default clearing time, depending upon the base rating of the generation equipment.

The producer's over-voltage and under-voltage interconnection protective functions shall detect voltage at point of interconnection and shall open the paralleling device within the times specified in the table below, if the voltage is within the stated ranges.

<b>Voltage Range [V] (% or nominal voltage <sup>a</sup>)</b>	<b>Clearing Time <sup>b</sup> (seconds)</b>
$V < 50\%$	0.16
$50\% \leq V < 88\%$	2.00
$110\% < V < 120\%$	1.00
$V \geq 120\%$	0.16

*a* Nominal system voltage stated in ANSI Std. C84.1-1995, Table 1.

*b* Maximum clearing time for generators with base ratings up to 30 kW, for base ratings greater than 30 kW, time represents default clearing time.

Section 400 - Equipment Specifications and Design Requirements**409 Over/Under Frequency Protection**

For Class A - NET and Class A facilities, the producer's over-frequency and under-frequency interconnection protective functions shall open the paralleling device within the times specified in the table below, if the frequency is within the stated ranges.

Frequency Range [ $f$ ] (Hz)	Maximum Clearing Time (seconds)
$f > 60.5$	0.16
$f < 59.5$	0.16

For Class B facilities, the producer's over-frequency and under-frequency interconnection protective functions shall open the paralleling device within the times specified in the table below, if the frequency is within the stated ranges.

Generator Base Rating	Frequency Range [ $f$ ] (Hz)	Clearing Time <sup>a</sup> (seconds)
$\leq 30$ kW	$f > 60.5$	0.16
	$f < 59.5$	0.16
$> 30$ kW	$f > 60.5$	0.16
	$f < \{59.8 - 57\}$	Adjustable 0.16 to 300 <sup>b</sup>
	$f < 57$	0.16

<sup>a</sup> For generators with base ratings up to 30 kW, maximum clearing times; for base ratings greater than 30 kW, default clearing times.

<sup>b</sup> Chugach shall provide specific clearing times for each producer interconnection.

For Class C and D facilities, the producer's over-frequency and under-frequency interconnection protective functions shall open the paralleling device within the times specified in the table below, if the frequency is within the stated ranges.

Frequency Range [ $f$ ] (Hz)	Clearing Time <sup>a</sup> (seconds)
$f > 60.5$	0.16
$f < \{59.8 - 57\}$	Adjustable 0.16 to 300 <sup>b</sup>
$f < 57$	0.16

<sup>a</sup> Default clearing times.

<sup>b</sup> Chugach shall provide specific clearing times for each producer interconnection.

**Section 400 - Equipment Specifications and Design Requirements****410 Synchronization Protection**

For parallel operation, the Producer's facilities shall meet the requirements pertaining to synchronization specified within IEEE Std. 1547, Parts 4.1.3 and 5.1.2. Specific equipment requirements are as follows:

**a) Synchronous Generator Interconnection**

Synchronous generators operated in parallel with the Chugach electric system are required to have automatic relay supervision (ANSI Device No. 25) to verify synchronism for permissive closure of the interconnection circuit breaker. Manual synchronizing systems are not approved for interconnected operation with the Chugach system.

**b) Induction Generator Interconnection**

Due to the 'slip' inherent to induction generators, synchronous operation cannot be precisely maintained when operating in parallel with the Chugach system. Therefore, Chugach requires that speed-matching relaying (ANSI Device No. 15) be utilized, set to permit breaker (or contactor) closing when generator speed is maintained above 95 percent of the Chugach system synchronous speed at the point of interconnection.

**c) Power Converter Interconnection**

Power converter systems that produce a fundamental voltage before the paralleling device is closed are capable of stand-alone operation, thus shall be tested to meet the requirements as outlined in IEEE Std. 1547, Part 5.1.2.A. All other power converter based systems shall meet the requirements contained in IEEE 1547, Part 5.1.2.C.

**411 Telemetry and Monitoring Requirements**

Telemetry generally involves the communication of measured outputs from the producer's generating facility to Chugach. This can include variables such as the status of equipment and controller functions as well as plant output data (voltage, real and reactive power, power quality, etc.). Typically, variables are transmitted with the aid of a communication channel that permits the measurement to be interpreted at a distance from the primary detector.

- a) Class A - NET facilities do not require data telemetry.
- b) Class A and B facilities do not require data telemetry in most cases.
- c) Classes C and D facilities do require telemetering of data to include interconnection status, power flows (real and reactive power), voltage, and frequency.
- d) For specific telemetering requirements for Class C and D facilities, refer to Interconnection Equipment Requirements by Class.

**Section 400 - Equipment Specifications and Design Requirements****412 Operational Data Logging**

Class A - NET facilities are not required to have operational data logging equipment. Class A and B facilities do not require operational data logging, but when such data is available or maintained by the producer, it shall be provided to Chugach upon request.

Class C and D facilities may require data logging. When required, the producer shall provide a seven (7) day digital data logger. For specific parameter recording requirements, refer to Section 418 for Class C facilities and Section 419 for Class D facilities.

Typically, operational data logs include recorded information on generating unit operations such as the following:

- Key operational parameter such as voltage, real and reactive power, frequency, etc.;
- Protective equipment operations (circuit breaker trips, protective relay targets, etc.);
- Time and nature of communications with Chugach Dispatch personnel.

**413 Export Power Control Equipment**

Class A - NET facilities are not required to have export power control equipment.

In most cases, export power control equipment will not be necessary for Class A and B facilities.

Where a producer and Chugach formulate a power purchase agreement for export power from the producer's facility, special control equipment may be necessary depending upon the specific performance terms of the agreement.

Class C and D facilities may export substantial amounts of power into Chugach's electric power system, and as a result, these classes of facilities may require export power control equipment. This equipment may include Voltage Regulation Control, Power Factor Controllers, and Power System Stabilizers, as necessary. Chugach shall determine when such equipment is necessary. Refer to the specific requirements for Class C in Section 418 and for Class D in Section 419 for further information.

**414 Protection & Control System Testing Conformance**

In all cases, the producer's protective relay and control systems associated with the interconnection shall adhere to the requirements contained in IEEE Std. 1547.1

In order to allow performance and verification of functional testing as required, these systems shall have accessible sensing inputs or testing terminal blocks, or acceptable equivalents as determined by Chugach.

**Section 400 - Equipment Specifications and Design Requirements****415 Class A - NET Equipment Requirements****A. Application of Minimum Requirements for Class A - NET Facilities**

This subsection addresses the general minimum interconnection equipment necessary for Class A - NET facilities. Specific requirements for each individual facility may vary, depending on factors such as location of the interconnection, the number and proximity of adjacent Chugach customers, and the characteristics of the facility interconnecting to the Chugach system. Chugach has developed minimum requirements based on the following assumptions as to the characteristics of Chugach's system and the producer's facilities at the point of interconnection:

1. The total capacity of all producer-owned non-utility generating equipment installed on, or proposed to be installed on, the interconnecting Chugach feeder, will be less than 10 percent of the average annual hourly peak demand (kVA) for that feeder.
2. Interconnections to Chugach's electric power system will be made at Chugach's standard secondary voltages on individual secondary circuits.
3. The producer will install non-utility generating equipment with a total capacity rating of 25 kVA or less,
4. Class A - NET installations are limited to single-phase, network, or three-phase services rated at 200 amps or less, utilizing self-contained metering equipment.

Where proposed interconnections fall outside of the above parameters, modifications to the minimum requirements will be necessary in order to maintain the safety, reliability, and operational performance of the Chugach system.

**B. Metering Requirements for Class A - NET Facilities**

Class A - NET installations require a residential combination meter panel and service disconnect meeting the requirements of Service Equipment Specification E-601 for residential applications or a combination safety socket panel with test-block bypass and service disconnect meeting the requirements of Service Equipment Specification E-602 for non-residential applications. Chugach will use a single meter with bi-directional measurement capability. Generator output metering is not required on Class A - NET facilities, except that Chugach reserves the right to require generator output metering at Chugach's expense.

**C. Interconnection Paralleling Devices for Class A - NET Facilities**

A paralleling device is required for Class A - NET facilities. Chugach requires approved switchgear or circuit breaker(s) (paralleling devices) to allow separation of the producer's generating equipment from the Chugach electric power system during fault conditions. The paralleling device establishes the physical electrical connection for parallel operation with the Chugach electric power system. Paralleling devices must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection as required by IEEE Std. 1547, Part 4.1.8.3.

**Section 400 - Equipment Specifications and Design Requirements****D. Interconnection Disconnect Devices for Class A - NET Facilities**

A manual interconnection disconnect device is required for Class A - NET facilities. Refer to Section 405 for details on interconnection disconnect devices.

Refer to Section 405 for options regarding switch placement on Class A - NET facilities.

**E. Interconnection Transformers for Class A - NET Facilities**

Class A - NET installations usually do not require a dedicated interconnection transformer. Refer to Section 406 for details on interconnection transformers.

**F. Protection and Control Devices for Class A - NET Facilities**

Refer to Section 407 for details regarding protection and control devices, the general interconnection protective and control requirements for Class A - NET installations are as follows:

**1. Paralleling Device**

- a. A Chugach-approved circuit breaker is required to allow separation of the producer's generation equipment from the Chugach system during fault conditions.
- b. This device must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection and must have sufficient interrupting capacity to interrupt the maximum available fault current at its location.

**2. Over/Under Voltage Protection**

- a. The producer's over-voltage and under-voltage interconnection protective functions shall detect voltage at the point of interconnection and shall open the paralleling device within the times specified, if the voltage is within the stated ranges.
- b. Refer to Section 408 for over/under voltage protection details.

**3. Over/Under Frequency Protection**

- a. The producer's over-frequency and under-frequency interconnection protective functions shall open the paralleling device within the times specified, if the frequency is within the stated ranges.
- b. Refer to Section 409 for over/under frequency protection details.

**Section 400 - Equipment Specifications and Design Requirements****G. Synchronization Protection for Class A - NET Facilities**

Refer to Section 410 for synchronization protection related to Class A - NET facilities.

**H. Ground-Fault Protection for Class A - NET Facilities**

In general, Class A - NET facilities may interconnect to Chugach's electric power system without the provision of ground-fault protection which limits contributions to ground faults on Chugach's system. However, in accordance with IEEE 1547, Part 4.2.1, the producer's interconnection equipment shall demonstrate the ability to cease energization of, and disconnect from, Chugach's electric power system under fault conditions.

**I. Phase-Fault Protection for Class A - NET Facilities**

In general, Class A - NET facilities may interconnect Chugach's electric power system without the provision of phase-fault protection which limits contributions to phase-to-phase faults or three-phase faults on Chugach's system. However, in accordance with IEEE 1547, Part 4.2.1, the producer's interconnection equipment shall demonstrate the ability to cease energization of, and disconnect from, Chugach's electric power system under fault conditions.

**J. Telemetry and Monitoring for Class A - NET Facilities**

Chugach will not require telephone or data line service at the metering point for Class A - NET facilities.

Chugach will not require power quality monitoring for Class A - NET facilities.

**K. Operational Data Logging for Class A - NET Facilities**

Chugach will not require operational data logging for Class A - NET facilities.

**L. Export Power Control Equipment for Class A - NET Facilities**

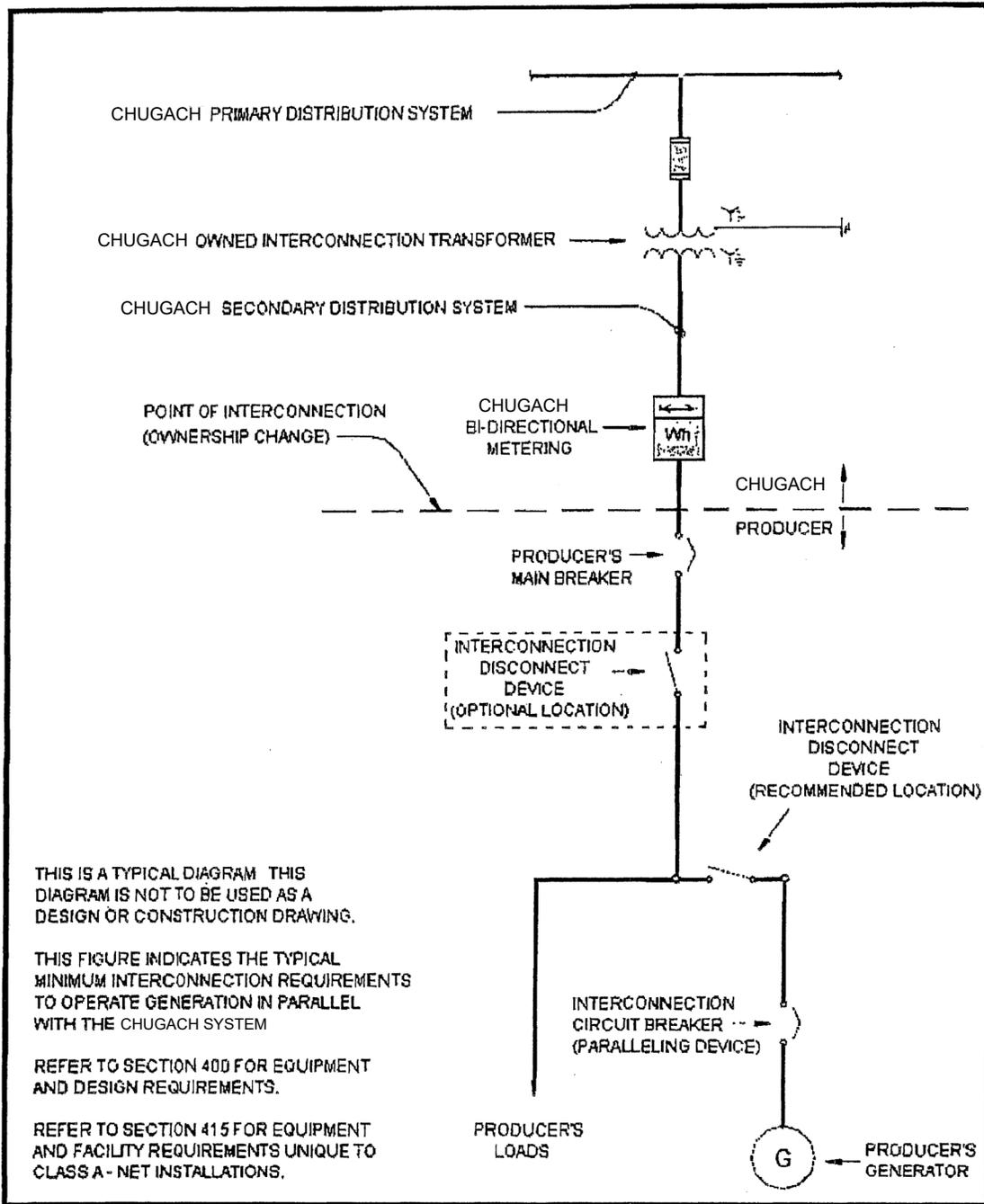
Chugach will not require export control equipment for Class A - NET facilities.

**Section 400 - Equipment Specifications and Design Requirements****M. Equipment Summary for Class A - NET Facilities**

Following is an interconnection equipment requirements summary for Class A - NET facilities

- Bi-directional Metering: Required
- Generator Output Metering: Not Required
- Paralleling Device: Required
- Manual Interconnection Disconnect Device: Recommended but not required
- Dedicated Interconnection Transformer: Normally not required, but may depend on specific facility characteristics
- Under-voltage Protection: Required
- Over-voltage Protection: Required
- Under-frequency Protection: Required
- Over-frequency Protection: Required
- Ground-fault Protection: Not required, but must meet IEEE 1547, Part 4.2.1
- Transfer Trip Capability: Not required
- Phase-fault Protection: Not Required
- Telemetry Capability: Not Required
- Power Quality Monitoring: Not Required
- Voice and Data Communication Capability: Required in the form of a 24-hour contact phone number
- Operational Data Logging: Not Required
- Export Power Control Equipment: Not Required
- Automatic Synchronizing w/ Relay Supervision: Required for facilities with synchronous and similar type generators; may be required for facilities with power converters
- Speed Matching Relaying: Required for facilities with induction generators

Section 400 - Equipment Specifications and Design Requirements



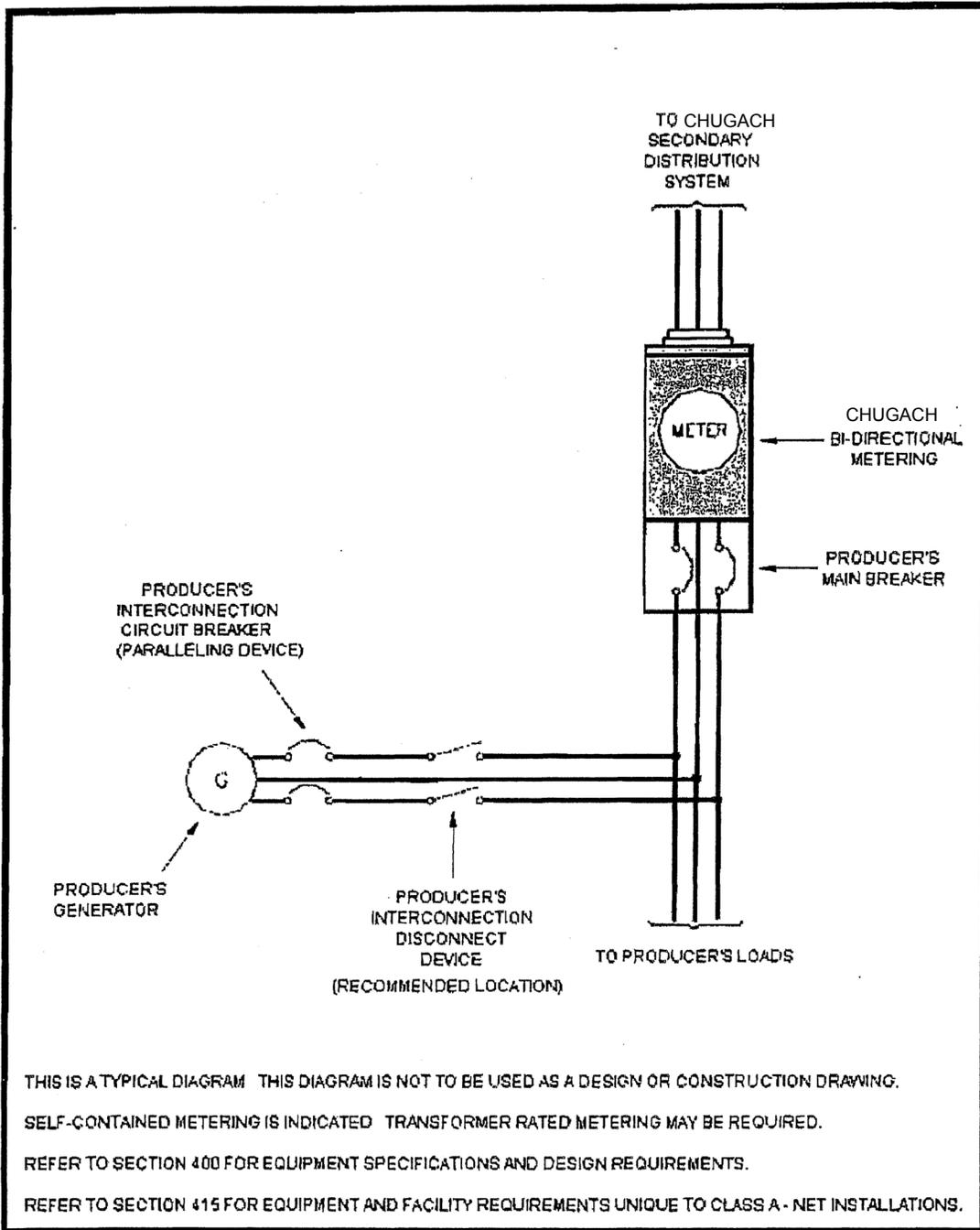
**FIGURE A-1 NET**

TYPICAL SECONDARY SYSTEM INTERCONNECTION  
CLASS A - NET FACILITIES (25 kVA AND LESS)

DRAWING NUMBER MLP\_FIG-A-1NET

SHEET 1 OF 1

Section 400 - Equipment Specifications and Design Requirements



**FIGURE A-2 NET**  
TYPICAL METERING DIAGRAM  
CLASS A - NET FACILITIES (25 KVA AND LESS)

DRAWING NUMBER MLP_FIGA-2NET	SHEET 1 OF 1
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**Section 400 - Equipment Specifications and Design Requirements****416 Class A Equipment Requirements****A. Application of Minimum Requirements for Class A Facilities**

This subsection addresses the general minimum interconnection equipment necessary for Class A facilities. Specific requirements for each individual facility may vary, depending on factors such as location of the interconnection, the number and proximity of adjacent Chugach customers, and the characteristics of the facility interconnecting to the Chugach system. Chugach has developed minimum requirements based on the following assumptions as to the characteristics of Chugach's system and the producer's facilities at the point of interconnection:

1. The total capacity of all producer-owned non-utility generating equipment installed on, or proposed to be installed on, the interconnecting Chugach feeder, will be less than 10 percent of the average annual hourly peak demand (kVA) for that feeder.
2. Interconnections to Chugach's electric power system will be made at Chugach's standard secondary voltages on individual secondary circuits.
3. The producer will install non-utility generating equipment with a total capacity rating of 25 kVA or less.
4. Class A installations are limited to single-phase, network, or three-phase services rated at 200 amps or less, utilizing self-contained metering equipment.

Where proposed interconnections fall outside of the above parameters, modifications to the minimum requirements will be necessary in order to maintain the safety, reliability, and operational performance of the Chugach system.

**B. Metering Requirements for Class A Facilities**

Bi-directional metering and generator output metering is required on the producer's generating facilities. In most cases, the bi-directional meter will meet the requirement for generator output metering. However, under some circumstances separate generator output metering may be required. Refer to Section 402 for details on general metering requirements and Section 403 for details on generator output metering requirements. Consult with Chugach regarding metering requirements for a specific non-utility generating facility.

**C. Interconnection Paralleling Devices for Class A Facilities**

A paralleling device is required for Class A facilities. Chugach requires approved switchgear or circuit breaker(s) (paralleling devices) to allow separation of the producer's generation equipment from the Chugach electric power system during fault conditions. The paralleling device establishes the physical electrical connection for parallel operation with the Chugach electric power system.

Paralleling devices must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection as required by IEEE Std. 1547, Part 4.1.8.3.

**Section 400 - Equipment Specifications and Design Requirements****D. Interconnection Disconnect Devices for Class A Facilities**

A manual interconnection disconnect device is required for Class A facilities. Refer to Section 405 for details on interconnection disconnect devices.

**E. Interconnection Transformers for Class A Facilities**

Class A installations usually do not require a dedicated interconnection transformer. Refer to Section 406 for details on interconnection transformers.

**F. Protection and Control Devices for Class A Facilities**

Refer to Section 407 for details regarding protection and control devices. The general interconnection protective and control requirements for Class A installations are as follows:

1. Paralleling Device
  - a. A Chugach-approved circuit breaker is required to allow separation of the producer's generating equipment from the Chugach system during fault conditions.
  - b. This device must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection and must have sufficient interrupting capacity to interrupt the maximum available fault current at its location.
2. Over/Under Voltage Protection
  - a. The producer's over-voltage and under-voltage interconnection protective functions shall detect voltage at the point of interconnection, and shall open the paralleling device within the times specified, if the voltage is within the stated ranges.
  - b. Refer to Section 408 for over/under voltage protection details.
3. Over/Under Frequency Protection
  - a. The producer's over-frequency and under-frequency interconnection protective functions shall open the paralleling device within the times specified, if the frequency is within the stated ranges.
  - b. Refer to Section 409 for over/under frequency protection details.

**Section 400 - Equipment Specifications and Design Requirements****G. Synchronization Protection for Class A Facilities**

Refer to Section 410 for synchronization protection related to Class A facilities.

**H. Ground-Fault Protection for Class A Facilities**

In general, Class A facilities may interconnect to Chugach's electric power system without the provision of ground-fault protection which limits contributions to ground faults on Chugach's system. However, in accordance with IEEE 1547, Part 4.2.1, the producer's interconnection equipment shall demonstrate the ability to cease energization of, and disconnect from, Chugach's electric power system under fault conditions.

**I. Phase-Fault Protection for Class A Facilities**

In general, Class A facilities may interconnect to Chugach's electric power system without the provision of phase-fault protection which limits contributions to phase-to-phase faults or three-phase faults on Chugach's system. However, in accordance with IEEE 1547, Part 4.2.1, the producer's interconnection equipment shall demonstrate the ability to cease energization of and disconnect from, Chugach's electric power system under fault conditions.

**J. Telemetry and Monitoring for Class A Facilities**

Chugach will not require telephone or data line service at the metering point for Class A facilities.

Chugach will not require power quality monitoring for Class A facilities.

**K. Operational Data Logging for Class A Facilities**

Chugach will not require operational data logging for Class A facilities.

**L. Export Power Control Equipment for Class A Facilities**

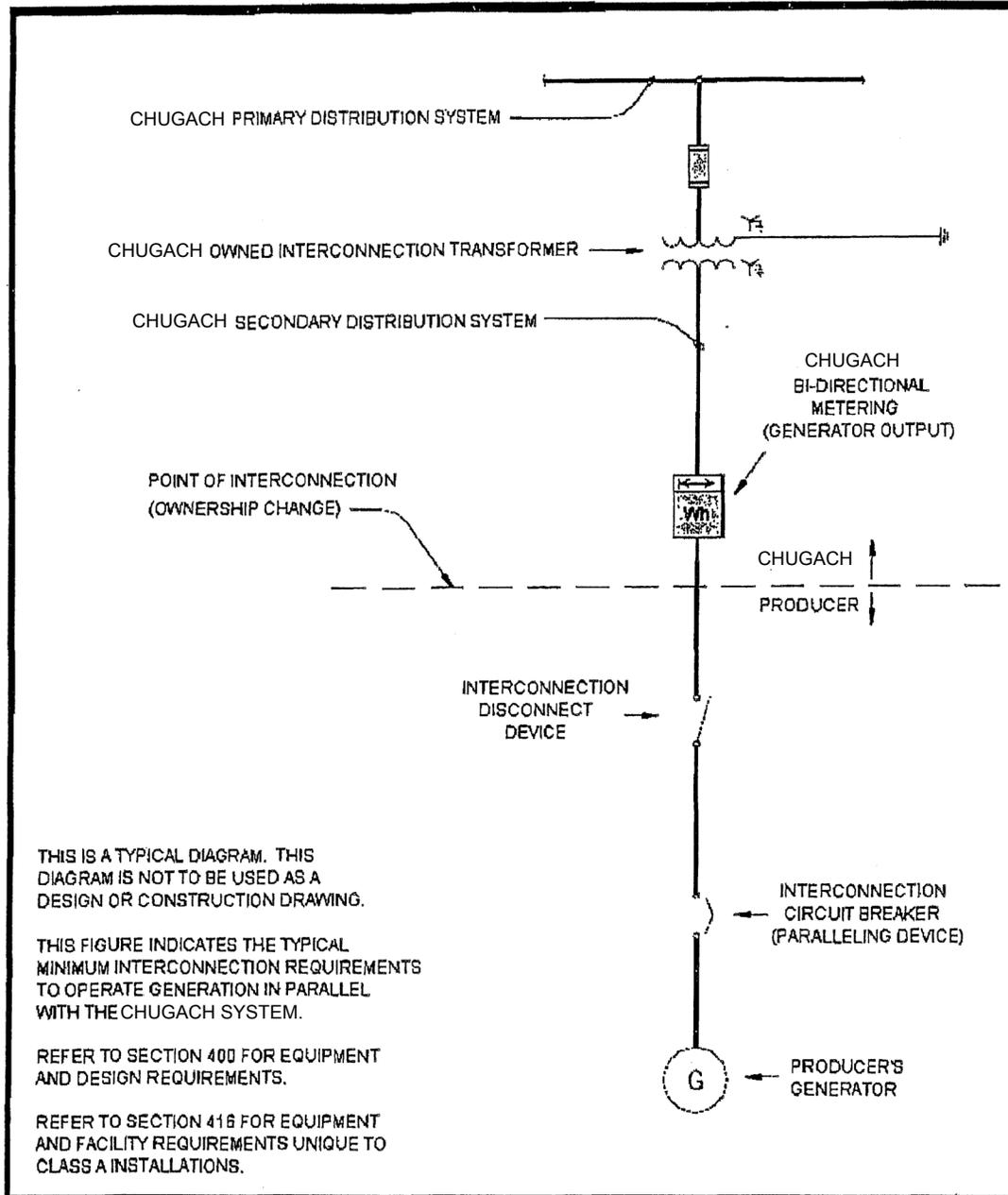
Chugach will not require export control equipment for Class A facilities.

**Section 400 - Equipment Specifications and Design Requirements****M. Equipment Summary for Class A Facilities**

Following is an interconnection equipment requirements summary for Class A facilities

- Bi-directional Metering: Required
- Generator Output Metering: Required, refer to Section 403
- Paralleling Device: Required
- Manual Interconnection Disconnect Device: Required
- Dedicated Interconnection Transformer: Normally not required, but may depend on specific facility characteristics
- Under-voltage Protection: Required
- Over-voltage Protection: Required
- Under-frequency Protection: Required
- Over-frequency Protection: Required
- Ground-fault Protection: Not required, but must meet IEEE 1547, Part 4.2.1
- Transfer Trip Capability: Not Required
- Phase-fault Protection: Not Required
- Telemetry Capability: Not Required
- Power Quality Monitoring: Not Required
- Voice and Data Communication Capability: Required in the form of a 24-hour contact phone number
- Operational Data Logging: Not Required
- Export Power Control Equipment: Not Required
- Automatic Synchronizing w/ Relay Supervision: Required for facilities with synchronous and similar type generators; may be required for facilities with power converters
- Speed Matching Relaying: Required for facilities with induction generators

Section 400 - Equipment Specifications and Design Requirements

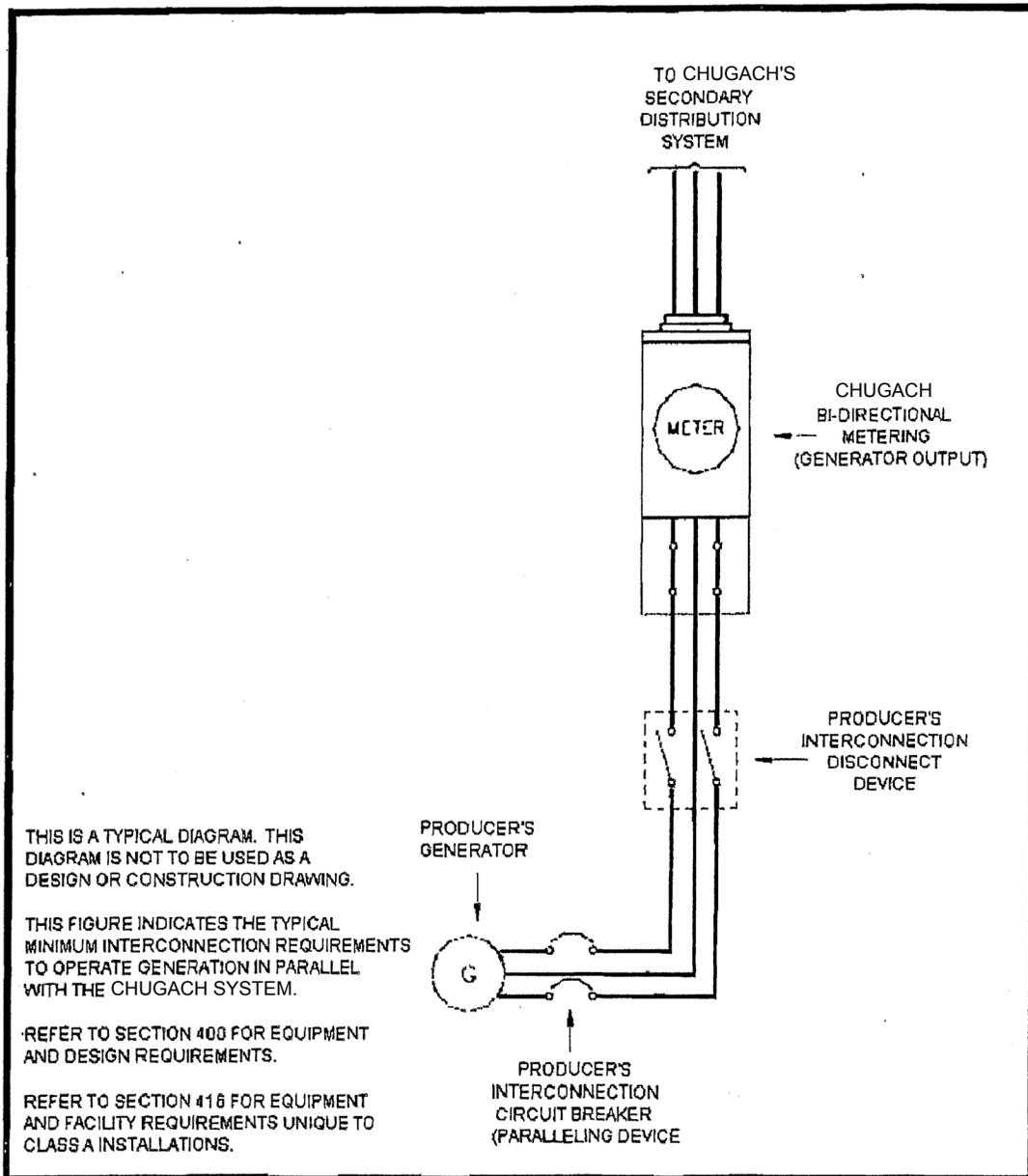


**FIGURE A-1**

**TYPICAL SECONDARY SYSTEM INTERCONNECTION  
CLASS A FACILITIES (25 KVA AND LESS)**

DRAWING NUMBER MLP_FIG-A-1	SHEET 1 OF 1
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Section 400 - Equipment Specifications and Design Requirements



**FIGURE A-2**

TYPICAL METERING DIAGRAM  
CLASS A FACILITIES (25 kVA AND LESS)

DRAWING NUMBER MLP\_FIG-A-2

SHEET 1 OF 1

**Section 400 - Equipment Specifications and Design Requirements****417 Class B Equipment Requirements****A. Application of Minimum Requirements for Class B Facilities.**

This subsection addresses the general minimum interconnection equipment necessary for Class B facilities. Specific requirements for each individual facility may vary, depending on factors such as location of the interconnection, the number and proximity of adjacent Chugach customers, and the characteristics of the facility interconnecting to the Chugach system. Chugach has developed minimum requirements based on the following assumptions as to the characteristics of Chugach's system and the producer's facilities at the point of interconnection:

1. The total capacity of all producer-owned non-utility generating equipment installed on, or proposed to be installed on, the interconnecting Chugach feeder, will be less than 15 percent of the average annual hourly peak demand (kVA) for that feeder.
2. Interconnections to Chugach's electric power system will be made at Chugach's standard secondary voltages on individual secondary circuits.
3. The producer will install non-utility generating equipment with a total capacity rating no less than 25 kVA and no greater than 100 kVA.

Where proposed interconnections fall outside of the above parameters, modifications to the minimum requirements will be necessary in order to maintain the safety, reliability, and operational performance of the Chugach system.

**B. Metering Requirements for Class B Facilities**

Bi-directional metering and generator output metering is required on the producer's generating facilities. In most cases, the bi-directional meter will meet the requirement for generator output metering. However, under some circumstances separate generator output metering may be required. Refer to Section 402 for details on general metering requirements and Section 403 for details on generator output metering requirements. Consult with Chugach regarding metering requirements for a specific non-utility generating facility.

**C. Interconnection Paralleling Devices for Class B Facilities**

A paralleling device is required for Class B facilities. Chugach requires approved switchgear or circuit breaker(s) (paralleling devices) to allow separation of the producer's generation equipment from the Chugach electric power system during fault conditions. The paralleling device establishes the physical electrical connection for parallel operation with the Chugach electric power system.

Paralleling devices must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection as required by IEEE Std. 1547, Part 4.1.8.3.

**Section 400 - Equipment Specifications and Design Requirements****D. Interconnection Disconnect Devices for Class B Facilities**

A manual interconnection disconnect device is required for Class B facilities. Refer to Section 405 for details on interconnection disconnect devices.

**E. Interconnection Transformers for Class B Facilities**

Generally, Class B installations do not require a dedicated interconnection transformer for interconnecting the producer's generating equipment. However, under certain conditions, the utilization of a dedicated transformer may be required. Examples of such conditions would include the following:

1. The producer's total generating equipment capacity rating is at or above the capacity rating of the existing Chugach transformer serving the Producer's facilities.
2. The Producer's electrical system characteristics differ from Chugach's standard system voltages and configurations (Refer to Section 304: Standard System Voltages).

Where the installation of a new dedicated interconnection transformer is required, the producer shall be responsible for all associated labor and material costs.

**F. Protection and Control Devices for Class B Facilities**

Refer to Section 407 for details regarding protection and control devices. The general interconnection protective and control requirements for Class B installations are as follows:

1. Paralleling Device
  - a. A Chugach-approved circuit breaker is required to allow separation of the producer's generating equipment from the Chugach system during fault conditions.
  - b. This device must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection and must have sufficient interrupting capacity to interrupt the maximum available fault current at its location.
2. Over/Under Voltage Protection
  - a. The producer's over-voltage and under-voltage interconnection protective functions shall detect voltage at the point of interconnection, and shall open the paralleling device within the times specified, if the voltage is within the stated ranges.
  - b. Refer to Section 408 for over/under voltage protection details.
3. Over/Under Frequency Protection
  - a. The producer's over-frequency and under-frequency interconnection protective functions shall open the paralleling device within the times specified, if the frequency is within the stated ranges.
  - b. Refer to Section 409 for over/under frequency protection details.

**Section 400 - Equipment Specifications and Design Requirements****G. Synchronization Protection for Class B Facilities**

For parallel operation, the producer's facilities shall meet the synchronization requirements specified in IEEE Std. 1547, Parts 4.1.3 and 5.1.2. Specific equipment requirements are as follows:

1. Synchronous Generator Interconnection
  - a) Synchronous generators operated in parallel with the Chugach electric system are required to have automatic relay supervision (ANSI Device No. 25) to verify synchronism for permissive closure of the interconnection circuit breaker.
  - b) Manual synchronizing systems are not approved for interconnected operation with the Chugach system.
2. Induction Generator Interconnection
  - a) Due to the "slip" inherent to induction generators, synchronous operation cannot be precisely maintained when operating in parallel with the Chugach system. Therefore, Chugach requires that speed-matching relaying (ANSI Device No. 15) be utilized, set to permit breaker (or contactor) closing when generator speed is maintained above 95 percent of the Chugach system synchronous speed at the point of interconnection.
3. Power Converter Interconnection
  - a) Power converter systems that produce a fundamental voltage before the paralleling device is closed are capable of stand-alone operation and as a result they shall be tested to meet the requirements as outlined in IEEE Std. 1547, Part 5.1.2.A.
  - b) All other power converter based systems shall meet the requirements contained in IEEE 1547, Part 5.1.2.C.

**H. Ground-Fault Protection for Class B Facilities**

In general, Class B facilities with a total generating capacity less than 40 kVA may interconnect to Chugach's electric power system without the provision of ground-fault protection which limits contributions to ground faults on Chugach's system. However, in accordance with IEEE 1547, Part 4.2.1, the producer's interconnection equipment shall demonstrate the ability to cease energization of, and disconnect from, Chugach's electric power system under fault conditions.

Class B facilities with a total generating capacity greater than 40 kVA may be required to provide ground-fault protection (ANSI Device 51N), depending upon the possible fault current contribution from the producer's facilities to ground faults on Chugach's system. The requirement will be determined by Chugach on a case-by-case basis.

**Section 400 - Equipment Specifications and Design Requirements****I. Phase-Fault Protection for Class B Facilities**

In general, Class B facilities with a total generating capacity less than 40 kVA may interconnect to Chugach's electric power system without the provision of phase-fault protection which limits contributions to phase-to-phase or three-phase faults on Chugach's system. However, in accordance with IEEE 1547, Part 4.2.1, the producer's interconnection equipment shall demonstrate the ability to cease energization of, and disconnect from, Chugach's electric power system under fault conditions.

Class B facilities with a total generating capacity greater than 40 kVA may be required to provide voltage-restrained overcurrent relaying (ANSI Device No. 50/51V), or impedance relaying (ANSI Device No. 21), for phase-fault protection. The requirement will be determined by Chugach on a case-by-case basis.

**J. Telemetry and Monitoring for Class B Facilities**

Chugach will not require telephone or data line service for meter telemetry at the metering point for Class B facilities under most circumstances. However, when telemetry is required, the line may be shared or dedicated and monthly charges for the telephone or data line shall be paid by the producer.

Chugach will not require power quality monitoring for Class B facilities under most circumstances. However, when Chugach determines that there is either the possibility of, or an indication that the output from the producer's facility can adversely affect the standard performance of the Chugach electric power system, including the quality of power delivered to Chugach customers, power quality monitoring will be required.

**K. Operational Data Logging for Class B Facilities**

Under most circumstances, Chugach will not require the installation of operational data logging equipment for Class B facilities. However, as available or maintained by the producer, such logs shall be made available to Chugach upon request.

**L. Export Power Control Equipment for Class B Facilities**

Under most circumstances, Chugach will not require the installation of control equipment for the purpose of exporting power. In certain cases, depending upon the specific contractual agreement between Chugach and the producer, additional control equipment may be necessary to control the amount and quality of the power exported. Such cases will be reviewed on an individual basis.

**Section 400 - Equipment Specifications and Design Requirements****M. Equipment Summary for Class B Facilities**

Following is an interconnection equipment requirements summary for Class B facilities

- Bi-directional Metering: Required
- Generator Output Metering: Required, refer to Section 403
- Paralleling Device: Required
- Manual Interconnection Disconnect Device: Required
- Dedicated Interconnection Transformer: Normally not required, but may depend on specific facility characteristics
- Under-voltage Protection: Required
- Over-voltage Protection: Required
- Under-frequency Protection: Required
- Over-frequency Protection: Required
- Ground-fault Protection: Generally not required for installations rated 40 kVA and lower. However, specific requirements will be determined on a case-by-case basis
- Transfer Trip Capability: Not Required
- Phase-fault Protection: Not Required
- Telemetry Capability: Typically not required for power converters. However, specific requirements will be determined on a case-by-case basis
- Power Quality Monitoring: May be required; will be determined on a case-by-case basis
- Voice and Data Communication Capability: Voice communications required, data communications not required
- Operational Data Logging: Not Required
- Export Power Control Equipment: May be required; will be determined on a case-by-case basis
- Automatic Synchronizing w/ Relay Supervision: Required for facilities with synchronous and similar type generators; may be required for facilities with power converters
- Speed Matching Relaying: Required for facilities with induction generators

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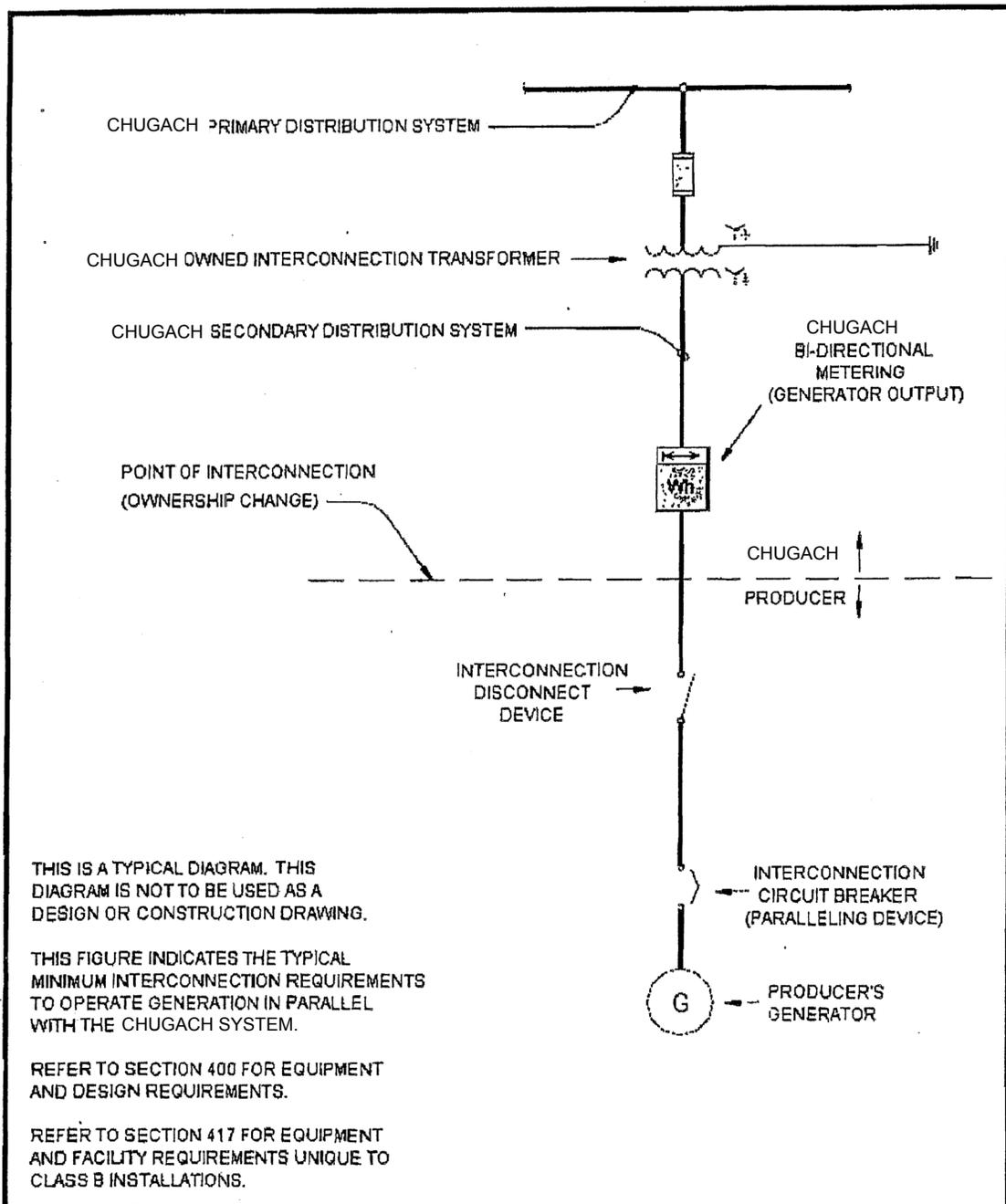
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**Section 400 - Equipment Specifications and Design Requirements**

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Section 400 - Equipment Specifications and Design Requirements



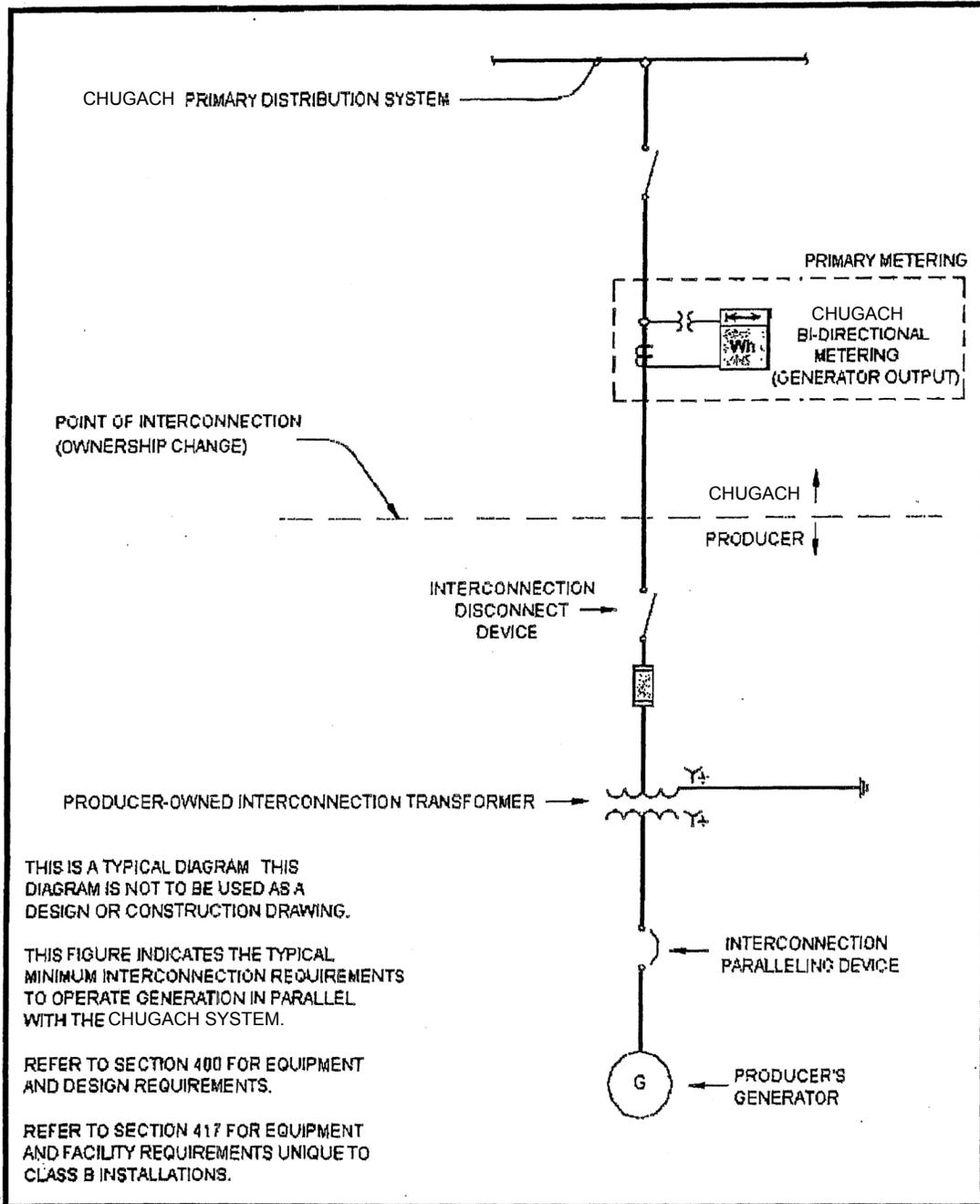
**FIGURE B-1**

TYPICAL SECONDARY SYSTEM INTERCONNECTION  
CLASS B FACILITIES (25 KVA TO 100 KVA)

DRAWING NUMBER MLP\_FIGB-1

SHEET 1 OF 1

Section 400 - Equipment Specifications and Design Requirements



**FIGURE B-2**

TYPICAL PRIMARY SYSTEM INTERCONNECTION  
CLASS B FACILITIES (25 KVA TO 100 KVA)

DRAWING NUMBER MLP\_FIGB-2

SHEET 1 OF 1

**Section 400 - Equipment Specifications and Design Requirements****418 Equipment Requirements - Class C Facilities****A. Application of Minimum Requirements for Class C Facilities**

This subsection addresses the general minimum interconnection equipment necessary for Class C facilities. Specific requirements for each individual facility may vary, depending on factors such as location of the interconnection, the number and proximity of adjacent Chugach customers, and the characteristics of the facility interconnecting to the Chugach system. Chugach has developed minimum requirements based on the following assumptions as to the characteristics of Chugach's system and the producer's facilities at the point of interconnection:

1. The total capacity of all producer-owned non-utility generating equipment installed on, or proposed to be installed on, the interconnecting Chugach feeder, will be less than 20 percent of the average annual hourly peak demand (kVA) for that feeder.
2. Interconnections to Chugach's electric power system will be made at Chugach's standard secondary voltages on individual secondary circuits.
3. The producer will install non-utility generating equipment with a total capacity rating no less than 100 kVA and no greater than 1,000 kVA.

Where proposed interconnections fall outside of the above parameters, modifications to the minimum requirements will be necessary in order to maintain the safety, reliability, and operational performance of the Chugach system.

**B. Metering Requirements for Class C Facilities**

Bi-directional metering and generator output metering is required on the producer's generating facilities. In most cases, the bi-directional meter will meet the requirement for generator output metering. However, under some circumstances separate generator output metering may be required. Refer to Section 402 for details on general metering requirements and Section 403 for details on generator output metering requirements. Consult with Chugach regarding metering requirements for a specific non-utility generating facility.

**C. Interconnection Paralleling Devices for Class C Facilities**

A paralleling device is required for Class C facilities. Chugach requires approved switchgear or circuit breaker(s) (paralleling devices) to allow separation of the producer's generation equipment from the Chugach electric power system during fault conditions. The paralleling device establishes the physical electrical connection for parallel operation with the Chugach electric power system.

Paralleling devices must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection as required by IEEE Std. 1547, Part 4.1.8.3.

**Section 400 - Equipment Specifications and Design Requirements****D. Interconnection Disconnect Devices for Class C Facilities**

A manual interconnection disconnect device is required for Class C facilities. Refer to Section 405 for details on interconnection disconnect devices.

**E. Interconnection Transformer for Class C Facilities**

Chugach requires a dedicated interconnection transformer be used to interconnect all Class C installations to the Chugach electric power system.

In cases where an existing Chugach transformer serves the producer at the proposed point of interconnection, that transformer may serve as the dedicated interconnection transformer, provided the following conditions are met:

1. The Producer's maximum generating capacity (kVA) does not exceed the nominal rating of the transformer.
2. No other Chugach customers are served by the existing transformer.

Where the installation of a new dedicated interconnection transformer is required, the producer shall be responsible for all associated labor and material costs.

**F. Protection and Control Devices for Class C Facilities**

Refer to Section 407 for details regarding protection and control devices. The general interconnection protective and control requirements for Class C installations are as follows:

1. Paralleling Device
  - a. A Chugach-approved circuit breaker is required to allow separation of the producer's generating equipment from the Chugach system during fault conditions.
  - b. This device must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection and must have sufficient interrupt capacity to interrupt the maximum available fault current at its location.
2. Over/Under Voltage Protection
  - a. The producer's over-voltage and under-voltage interconnection protective functions shall detect voltage at the point of interconnection and shall open the paralleling device within the times specified, if the voltage is within the stated ranges.
  - b. Refer to Section 408 for over/under voltage protection details.
3. Over/Under Frequency Protection
  - a. The producer's over-frequency and under-frequency interconnection protective functions shall open the paralleling device within the times specified, if the frequency is within the stated ranges.
  - b. Refer to Section 409 for over/under frequency protection details.

**Section 400 - Equipment Specifications and Design Requirements****G. Synchronization Protection for Class C Facilities**

For parallel operation, the producer's facilities shall meet the synchronization requirements specified in IEEE Std. 1547, Parts 4.1.3 and 5.1.2. Specific equipment requirements are as follows:

**1. Synchronous Generator Interconnection**

- a) Synchronous generators operated in parallel with the Chugach electric system are required to have automatic relay supervision (ANSI Device No. 25) to verify synchronism for permissive closure of the interconnection circuit breaker.
- b) Manual synchronizing systems are not approved for interconnected operation with the Chugach system.

**2. Induction Generator Interconnection**

- a) Due to the "slip" inherent to induction generators, synchronous operation cannot be precisely maintained when operating in parallel with the Chugach system. Therefore, Chugach requires that speed-matching relaying (ANSI Device No. 15) be utilized, set to permit breaker (or contactor) closing when generator speed is maintained above 95 percent of the Chugach system synchronous speed at the point of interconnection.

**3. Power Converter Interconnection**

- a) Power converter systems that produce a fundamental voltage before the paralleling device is closed are capable of stand-alone operation and as a result they shall be tested to meet the requirements as outlined in IEEE Std. 1547, Part 5.1.2.A.
- b) All other power converter based systems shall meet the requirements contained in IEEE 1547, Part 5.1.2.C.

**H. Ground-Fault Protection for Class C Facilities**

Ground-fault Protection is required for all Class C facilities. This type of protection senses phase-to-ground faults on the Chugach electric power system and initiates tripping of the interconnection paralleling device in order to prohibit continuous contribution to such faults by the producer's generating equipment.

Ground overcurrent relaying (ANSI Device No. 51N) is required for ground-fault protection.

The producer shall provide an appropriate ground-fault protection scheme and coordinate with Chugach regarding trip settings. Prior to authorization for interconnected operation, Chugach will review and approve the ground fault protection scheme and trip settings.

**Section 400 - Equipment Specifications and Design Requirements****I. Phase-Fault Protection for Class C Facilities**

Phase-fault Protection is required for all Class C facilities. This type of protection senses phase-to-phase faults or three-phase faults on the Chugach electric power system and initiates tripping of the interconnection paralleling device in order to prohibit continuous contribution to such faults from the producer's generating equipment.

Voltage-restrained overcurrent relaying (ANSI Device No. 50/51V), or impedance relaying (ANSI Device No. 21), is required for phase-fault protection.

The producer shall provide an appropriate phase-fault protection scheme and coordinate with Chugach regarding trip settings. Prior to authorization for interconnected operation, Chugach will review and approve the phase-fault protection scheme and trip settings.

**J. Telemetry and Monitoring for Class C Facilities**

A telephone or data line service at the metering point is required for Chugach's meter telemetry. This line may be shared or dedicated; monthly charges shall be paid by the producer.

Power quality monitoring shall be required in cases where Chugach determines that a potential for, or an indication that, the output from the producer's facility may adversely affect the standard performance of Chugach's electric power system or the quality of power delivered to other Chugach customers.

Depending upon specific requirements, the monitoring system may be required to detect and record such disturbances as wave form distortions, electrical noise, voltage sags or swells, frequency deviations, and harmonic distortions. The requirement for power quality monitoring will be determined by Chugach on a case-by-case basis.

**K. Operational Data Logging for Class C Facilities**

All Class C generating facilities are required to have and maintain a seven (7) day digital data logger which records volts, watts, VARs, frequency, and the status of key system informational elements, including relay targets and interconnection circuit breaker trip operations. The data logger shall provide a standard time stamp for tracked variables, including date and time of day (HH:MM:SS). Chugach will have the right to review these logs, especially when analyzing system disturbances.

**L Export Power Control Equipment for Class C Facilities**

In cases where the producer and Chugach formulate a power purchase agreement, the following equipment may be necessary in accordance with the terms of the specific contract:

1. Voltage Regulator/Power Factor Controller
  - a. The producer may be required to utilize either an approved voltage regulator or power factor controller in order to control voltage within specified limits.

**Section 400 - Equipment Specifications and Design Requirements**

- b. Where a voltage regulator is utilized for this purpose, it must be capable of maintaining the nominal Chugach interconnection point voltage under steady-state conditions, without hunting, and within  $\pm 0.5$  percent of the required set point (as directed by Chugach).
- c. Where a power factor controller is utilized, it must be capable of maintaining the power factor setting within  $\pm 1.0$  percent, at full load, at any point between 90 percent lagging and 95 percent leading. For export power to Chugach's electric power system, a power factor of 1.0 is generally preferred.
- d. The producer's generation may be required to follow a Chugach specified voltage or VAR schedule on an hourly, daily, or seasonal basis depending on the specific terms of a power purchase contract.
- e. The producer shall coordinate with Chugach Power Dispatch Center for specific operational instructions and issues.

**2. Direct Digital Control**

- a. Direct digital control (supervisory control) of unit output from Chugach's Power Dispatch Center may be required if the unit is to be dispatchable by Chugach under agreement.

**3. Power System Stabilizer**

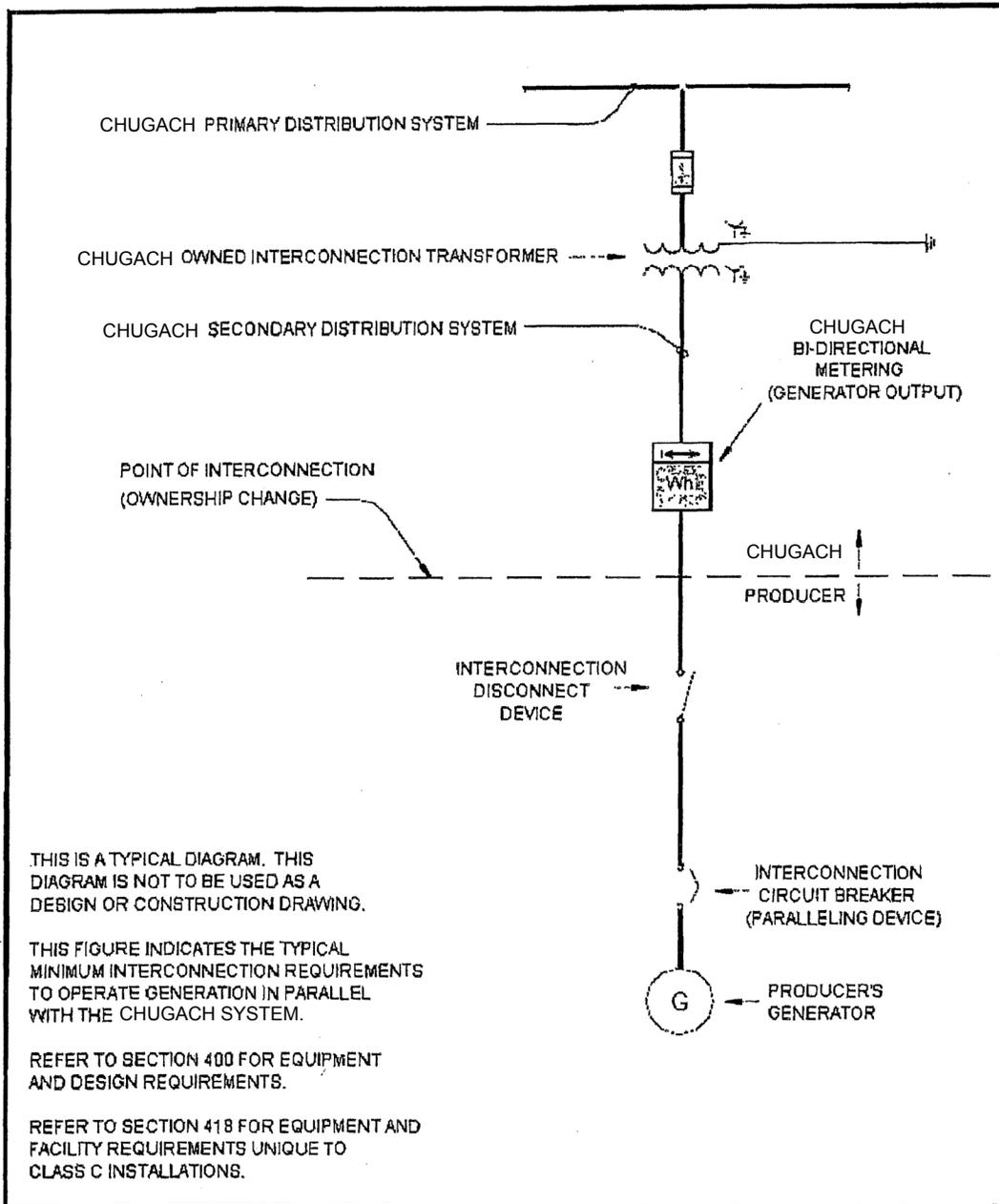
- a. A power system stabilizer (PSS) control system may be required to provide necessary stability to the electrical system when system power oscillations occur.
- b. The necessity of a PSS will depend on the generator capacity and characteristics, the location of the interconnection to the Chugach system, and the system voltage level at the point of interconnection.

**Section 400 - Equipment Specifications and Design Requirements****M. Equipment Summary for Class C Facilities**

Following is an interconnection equipment requirements summary for Class C facilities

- Bi-directional Metering: Required
- Generator Output Metering: Required, refer to Section 403
- Paralleling Device: Required
- Manual Interconnection Disconnect Device: Required
- Dedicated Interconnection Transformer: Required
- Under-voltage Protection: Required
- Over-voltage Protection: Required
- Under-frequency Protection: Required
- Over-frequency Protection: Required
- Ground-fault Protection: Required
- Transfer Trip Capability: Not Required
- Phase-fault Protection: Required
- Telemetry Capability: Required
- Power Quality Monitoring: May be required; will be determined on a case-by-case basis
- Voice and Data Communication Capability: Required
- Operational Data Logging: Required; refer to Section 418, subsection K
- Export Power Control Equipment: May be required; will be determined on a case-by-case basis
- Automatic Synchronizing w/ Relay Supervision: Required for facilities with synchronous and similar type generators; may be required for facilities with power converters
- Speed Matching Relaying: Required for facilities with induction generators

Section 400 - Equipment Specifications and Design Requirements

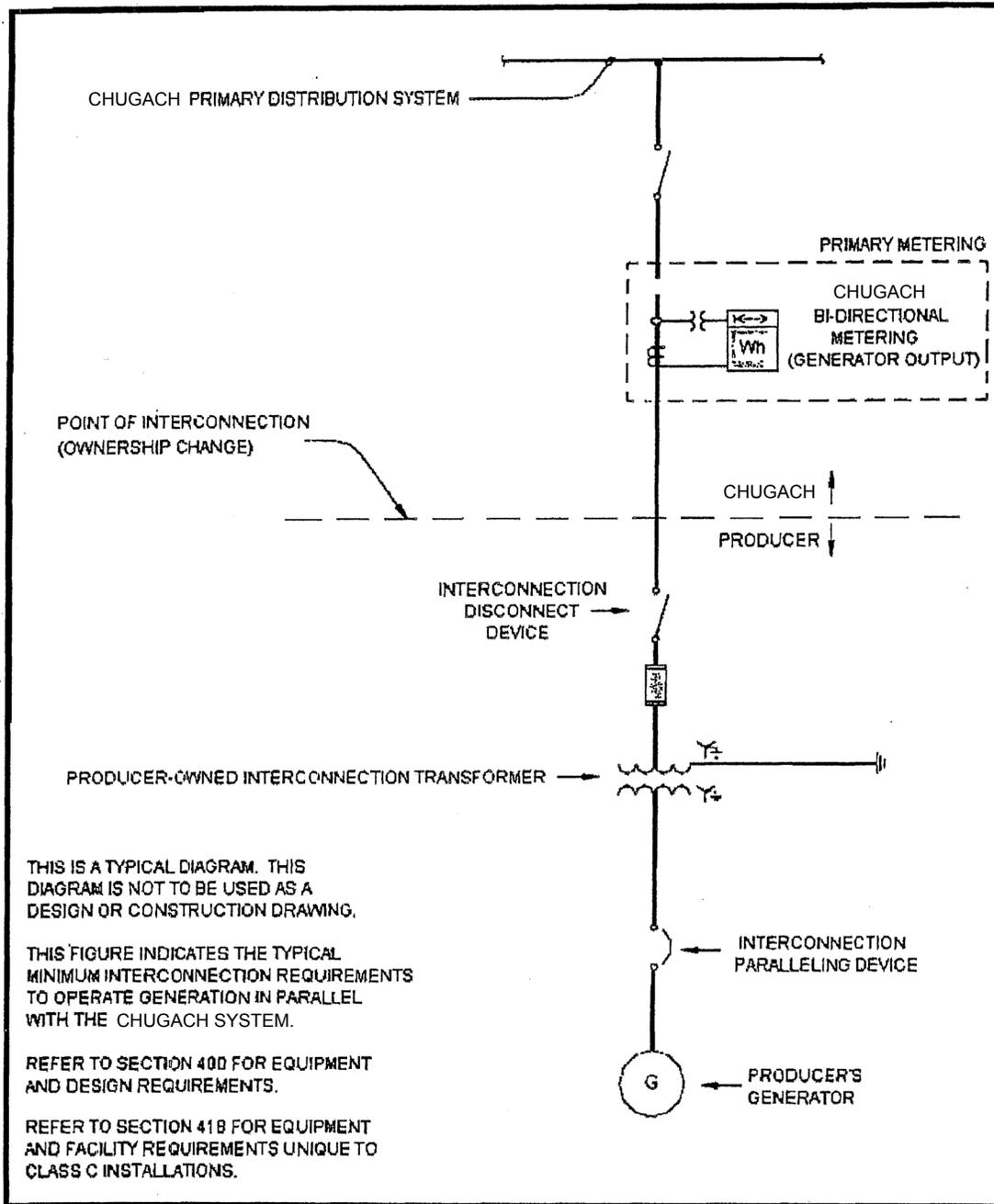


**FIGURE C-1**

TYPICAL SECONDARY SYSTEM INTERCONNECTION  
CLASS C FACILITIES (100 KVA TO 1000 KVA)

DRAWING NUMBER MLP_FIG-C-1	SHEET 1 OF 1
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Section 400 - Equipment Specifications and Design Requirements



**FIGURE C-2**

TYPICAL PRIMARY SYSTEM INTERCONNECTION  
CLASS C FACILITIES (100 kVA TO 1000 kVA)

DRAWING NUMBER MLP\_FIG-2

SHEET 1 OF 1

**Section 400 - Equipment Specifications and Design Requirements****419 Equipment Requirements Class D Facilities****A. Application of Minimum Requirements for Class D Facilities**

This subsection addresses the general minimum interconnection equipment necessary for Class D facilities. Specific requirements for each individual facility may vary, depending on factors such as location of the interconnection, the number and proximity of adjacent Chugach customers, and the characteristics of the facility interconnecting to the Chugach system. Chugach has developed minimum requirements based on the following assumptions as to the characteristics of Chugach's system and the producer's facilities at the point of interconnection:

1. The total capacity of all producer-owned non-utility generating equipment installed on, or proposed to be installed on, the interconnecting Chugach feeder, will be less than 25 percent of the average annual hourly peak demand (kVA) for that feeder.
2. Interconnections to Chugach's electric power system will be made at Chugach's standard distribution level primary voltages of 2.4/4.16 kV, 7.2/12.47 kV, or 19.9/34.5 kV.
3. The producer will install non-utility generating equipment with a total capacity rating no less than 1,000 kVA and no greater than 5,000 kVA.

Where proposed interconnections fall outside of the above parameters, modifications to the minimum requirements will be necessary in order to maintain the safety, reliability, and operational performance of the Chugach system.

**B. Metering Requirements for Class D Facilities**

Bi-directional metering and generator output metering is required on the producer's generating facilities. In most cases, the bi-directional meter will meet the requirement for generator output metering. However, under some circumstances separate generator output metering may be required. Refer to Section 402 for details on general metering requirements and Section 403 for details on generator output metering requirements. Consult with Chugach regarding metering requirements for a specific non-utility generating facility.

**C. Interconnection Paralleling Devices for Class D Facilities**

A paralleling device is required for Class D facilities. Chugach requires approved switchgear or circuit breaker(s) (paralleling devices) to allow separation of the producer's generation equipment from the Chugach electric power system during fault conditions. The paralleling device establishes the physical electrical connection for parallel operation with the Chugach electric power system.

Paralleling devices must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection as required by IEEE Std. 1547, Part 4.1.8.3.

**Section 400 - Equipment Specifications and Design Requirements****D. Interconnection Disconnect Devices for Class D Facilities**

A manual interconnection disconnect device is required for Class D facilities. Refer to Section 405 for details on interconnection disconnect devices.

**E. Interconnection Transformer for Class D Facilities**

Chugach requires a dedicated interconnection transformer be used to interconnect all Class D installations to the Chugach electric power system.

In cases where an existing Chugach transformer serves the producer at the proposed point of interconnection, that transformer may serve as the dedicated interconnection transformer, provided the following conditions are met:

1. The Producer's maximum generating capacity (kVA) does not exceed the nominal rating of the transformer.
2. No other Chugach customers are served by the existing transformer.

Where the installation of a new dedicated interconnection transformer is required, the producer shall be responsible for all associated labor and material costs.

**F. Protection and Control Devices for Class D Facilities**

Refer to Section 407 for details regarding protection and control devices. The general interconnection protective and control requirements for Class D installations are as follows:

1. Paralleling Device
  - a. A Chugach-approved circuit breaker is required to allow separation of the producer's generating equipment from the Chugach system during fault conditions.
  - b. This device must be capable of withstanding 220% of the Chugach system voltage at the point of interconnection and must have sufficient interrupting capacity to interrupt the maximum available fault current at its location.
2. Over/Under Voltage Protection
  - a. The producer's over-voltage and under-voltage interconnection protective functions shall detect voltage at the point of interconnection, and shall open the paralleling device within the times specified, if the voltage is within the stated ranges.
  - b. Refer to Section 408 for over/under voltage protection details.
3. Over/Under Frequency Protection
  - a. The producer's over-frequency and under-frequency interconnection protective functions shall open the paralleling device within the times specified, if the frequency is within the stated ranges.
  - b. Refer to Section 409 for over/under frequency protection details.

**Section 400 - Equipment Specifications and Design Requirements****G. Synchronization Protection for Class D Facilities**

For parallel operation, the producer's facilities shall meet the synchronization requirements specified in IEEE Std. 1547, Parts 4.1.3 and 5.1.2. Specific equipment requirements are as follows:

**1. Synchronous Generator Interconnection**

- a) Synchronous generators operated in parallel with the Chugach electric system are required to have automatic relay supervision (ANSI Device No. 25) to verify synchronism for permissive closure of the interconnection circuit breaker.
- b) Manual synchronizing systems are not approved for interconnected operation with the Chugach system.

**2. Induction Generator Interconnection**

- a) Due to the "slip" inherent to induction generators, synchronous operation cannot be precisely maintained when operating in parallel with the Chugach system. Therefore, Chugach requires that speed-matching relaying (ANSI Device No. 15) be utilized, set to permit breaker (or contactor) closing when generator speed is maintained above 95 percent of the Chugach system synchronous speed at the point of interconnection.

**3. Power Converter Interconnection**

- a) Power converter systems that produce a fundamental voltage before the paralleling device is closed are capable of stand-alone operation and as a result they shall be tested to meet the requirements as outlined in IEEE Std. 1547, Part 5.1.2.A.
- b) All other power converter based systems shall meet the requirements contained in IEEE 1547, Part 5.1.2.C.

**H. Ground-Fault Protection for Class Facilities**

Ground-fault Protection is required for all Class D facilities. This type of protection senses phase-to-ground faults on the Chugach electric power system and initiates tripping of the interconnection paralleling device in order to prohibit continuous contribution to such faults by the producer's generating equipment.

Ground overcurrent relaying (ANSI Device No. 51N) is required for ground-fault protection.

The producer shall provide an appropriate ground-fault protection scheme and coordinate with Chugach regarding trip settings. Prior to authorization for interconnected operation, Chugach will review and approve the ground fault protection scheme and trip settings.

**Section 400 - Equipment Specifications and Design Requirements****I. Phase-Fault Protection for Class D Facilities**

Phase-fault Protection is required for all Class D facilities. This type of protection senses phase-to-phase faults or three-phase faults on the Chugach electric power system and initiates tripping of the interconnection paralleling device in order to prohibit continuous contribution to such faults from the producer's generating equipment.

Voltage-restrained overcurrent relaying (ANSI Device No. 50/51V), or impedance relaying (ANSI Device No. 21), is required for phase-fault protection.

The producer shall provide an appropriate phase-fault protection scheme and coordinate with Chugach regarding trip settings. Prior to authorization for interconnected operation, Chugach will review and approve the phase-fault protection scheme and trip settings.

**J. Transfer Trip Capability for Class D Facilities**

Chugach requires the producer to provide transfer trip capability for Class D facilities. Transfer trip capability is required in order to enable Chugach's system protection equipment to disconnect the producer's facility from Chugach's electric power system during system faults or disturbances. This is a critical function that enables Chugach's system protection equipment to operate as designed. The producer shall provide a dedicated, isolated voice grade fiber-optic communications circuit for this purpose.

**K. Telemetry and Monitoring for Class D Facilities**

A telephone or data line service at the metering point is required for Chugach's meter telemetry. This line may be shared or dedicated; monthly charges shall be paid by the producer.

Power quality monitoring shall be required in cases where Chugach determines that a potential for, or an indication that, the output from the producer's facility may adversely affect the standard performance of Chugach's electric power system or the quality of power delivered to other Chugach customers.

Depending upon specific requirements, the monitoring system may be required to detect and record such disturbances as wave form distortions, electrical noise, voltage sags or swells, frequency deviations, and harmonic distortions. The requirement for power quality monitoring will be determined by Chugach on a case-by-case basis.

**L. Operational Data Logging for Class D Facilities**

All Class D generating facilities are required to have and maintain a seven (7) day digital data logger which records volts, watts, VARs, frequency, and the status of key system informational elements, including relay targets and interconnection circuit breaker trip operations. The data logger shall provide a standard time stamp for tracked variables, including date and time of day (HH:MM:SS). Chugach will have the right to review these logs, especially when analyzing system disturbances.

**Section 400 - Equipment Specifications and Design Requirements****M. Export Power Control Equipment for Class D Facilities**

In cases where the producer and Chugach formulate a power purchase agreement, the following equipment may be necessary in accordance with the terms of the specific contract:

**1. Voltage Regulator/Power Factor Controller**

- a. The producer may be required to utilize either an approved voltage regulator or power factor controller in order to control voltage within specified limits.
- b. Where a voltage regulator is utilized for this purpose, it must be capable of maintaining the nominal Chugach interconnection point voltage under steady-state conditions, without hunting, and within  $\pm 0.5$  percent of the required set point (as directed by Chugach).
- c. Where a power factor controller is utilized, it must be capable of maintaining the power factor setting within  $\pm 1.0$  percent, at full load, at any point between 90 percent lagging and 95 percent leading. For export power to Chugach's electric power system, a power factor of 1.0 is generally preferred.
- d. The producer's generation may be required to follow a Chugach specified voltage or VAR schedule on an hourly, daily, or seasonal basis depending on the specific terms of a power purchase contract.
- e. The producer shall coordinate with Chugach Power Dispatch Center for specific operational instructions and issues.

**2. Direct Digital Control**

- a. Direct digital control (supervisory control) of unit output from Chugach's Power Dispatch Center may be required if the unit is to be dispatchable by Chugach under agreement.

**3. Power System Stabilizer**

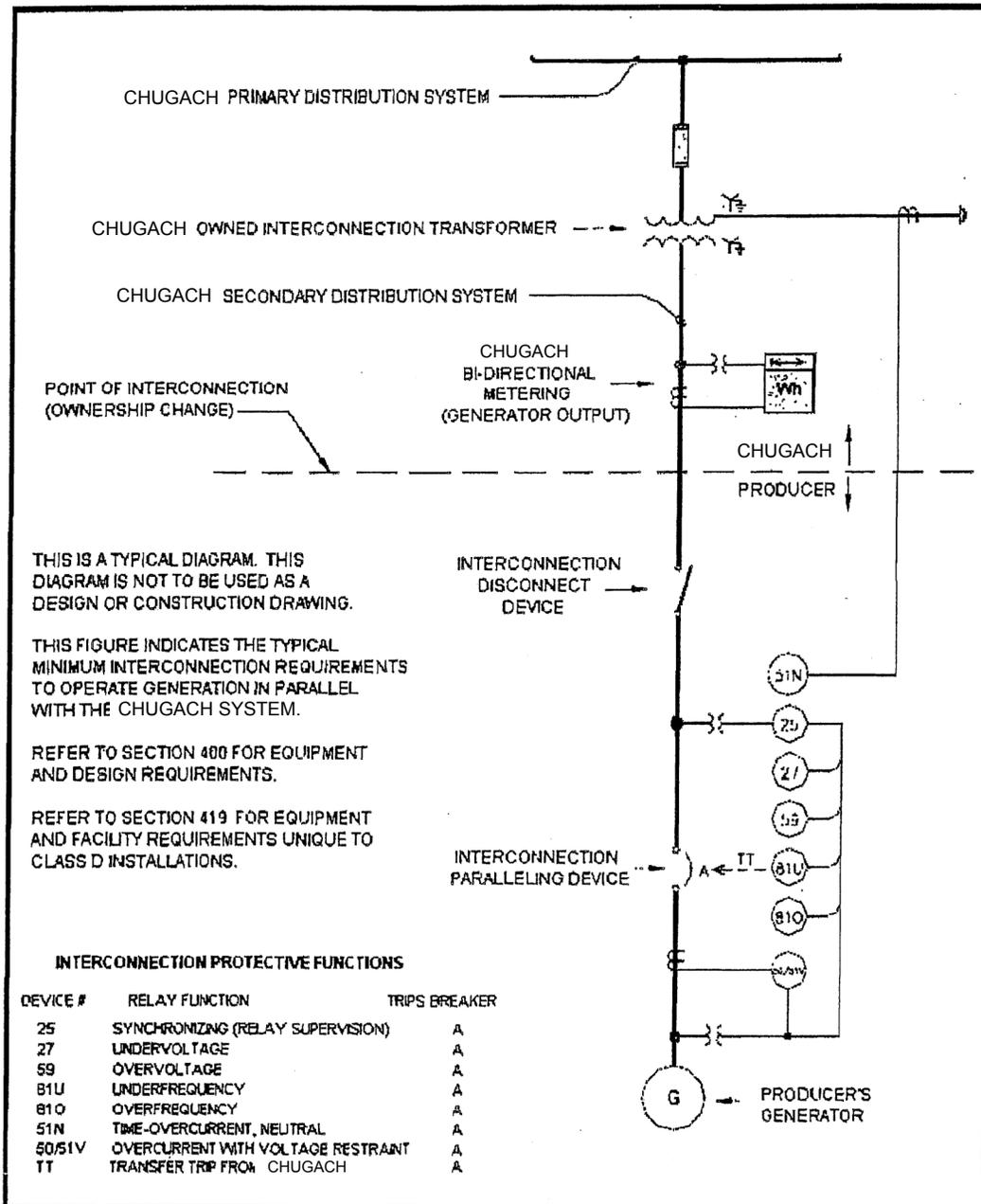
- a. A power system stabilizer (PSS) control system may be required to provide necessary stability to the electrical system when system power oscillations occur.
- b. The necessity of a PSS will depend on the generator capacity and characteristics, the location of the interconnection to the Chugach system, and the system voltage level at the point of interconnection.

**Section 400 - Equipment Specifications and Design Requirements****N. Equipment Summary for Class D Facilities**

Following is an interconnection on equipment requirements summary for Class D facilities

- Bi-Directional Metering: Required
- Generator Output Metering: Required, refer to Section 403
- Paralleling Device: Required
- Manual Interconnection Disconnect Device: Required
- Dedicated Interconnection Transformer: Required
- Under-voltage Protection: Required
- Over-voltage Protection: Required
- Under-frequency Protection: Required
- Over-frequency Protection: Required
- Ground-fault Protection: Required
- Transfer Trip Capability: Required
- Phase-fault Protection: Required
- Telemetry Capability: Required
- Power Quality Monitoring: May be required; will be determined on a case-by-case basis
- Voice and Data Communication Capability: Required
- Operational Data Logging: Required, refer to Section 419, subsection L
- Export Power Control Equipment: May be required; will be determined on a case-by-case basis
- Automatic Synchronizing w/ Relay Supervision: Required for facilities with synchronous and similar type generators; may be required for facilities with power converters
- Speed Matching Relaying: Required for facilities with induction generators

Section 400 - Equipment Specifications and Design Requirements



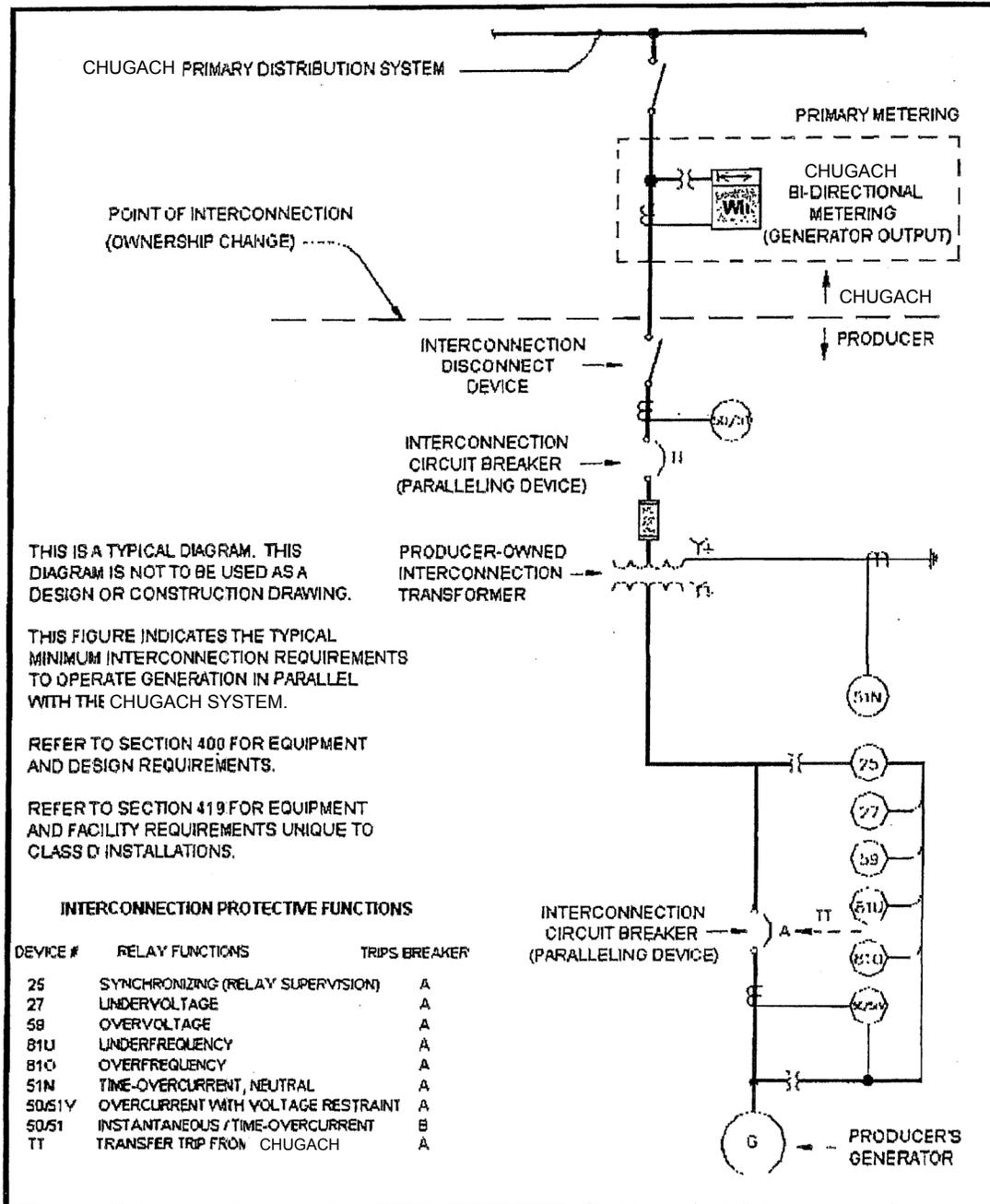
**FIGURE D-1**

**TYPICAL SECONDARY SYSTEM INTERCONNECTION  
CLASS D FACILITIES (1000 kVA TO 5000 kVA)**

DRAWING NUMBER MLP\_FIGD-1

SHEET 1 OF 1

Section 400 - Equipment Specifications and Design Requirements



**FIGURE D-2**

TYPICAL PRIMARY SYSTEM INTERCONNECTION  
CLASS D FACILITIES (1000 kVA TO 5000 kVA)

DRAWING NUMBER MLP\_FIGD-2

SHEET 1 OF 1

**Section 400 - Equipment Specifications and Design Requirements****420 Voice and Data Communications**

The capability to make direct verbal communications via telephone with the producer or the operator of producer's facility is required for all facility classifications. Voice communications shall be provided so that operating instructions or notification of system conditions can be given to the producer or any designated operator of the producer's equipment as necessary. Accordingly, the producer is required to provide a 24-hour accessible voice contact telephone number to Chugach.

For Class C and D facilities, data communications capability is required so that electronic data and/or operating instructions can be transferred between Chugach and the producer's facility as necessary.

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**Section 400 - Equipment Specifications and Design Requirements**

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**Section 500 - Interconnected Operating Requirements****501 General Operating Requirements**

The general operating requirements and criteria contained in this section apply to all non-utility generating facilities interconnected to the Chugach electric power system. Any producer operating outside of these requirements, unless provided express permission by Chugach, will not be permitted to operate in parallel with Chugach and will be responsible for any and all remedial actions and associated costs prior to gaining approval for parallel operation. The consequences for failing to meet any of these requirements are immediate disconnection and payment of all associated costs.

**502 Insurance Requirements**

The producer (owner) shall maintain general liability insurance coverage through a standard homeowner's policy or a standard commercial business policy for Class A - NET, Class A, and Class B facilities.

Producers (owners) of non-utility generation facilities classified as either Class A - NET or Class A facilities shall maintain a liability insurance policy in an amount no less than \$300,000.00. Producers (owners) of non-utility generation facilities classified as Class B facilities shall maintain a liability insurance policy in an amount no less than \$500,000.00.

Producers (owners) of non-utility generation facilities classified as either Class C or Class D facilities shall provide comprehensive general liability insurance coverage appropriate to the system design and capacity as determined by Chugach.

The producer (owner) shall provide Chugach with an up-to-date copy of the insurance policy declarations page prior to interconnecting non-utility generating equipment. The producer (owner) shall be obligated to furnish a copy of the insurance policy declarations page on an annual basis as long as the non-utility generating equipment is interconnected with the Chugach system.

The producer (owner) shall notify Chugach immediately by telephone and in writing within twenty-four hours after the occurrence of any accident as a result of the producer's (owner's) non-utility generating activities.

Required insurance does not relieve or release the producer (owner), its agents, subcontractors, and invitees from, or to limit their liability as to any and all obligations that result from non-utility generator operation.

**503 Approval for Parallel Operation**

The producer may not commence parallel operation of generating facilities without final written approval from Chugach. Chugach shall have the right to require inspection or witness testing of the producer's equipment or devices associated with the interconnection by qualified third parties.

**Section 500 - Interconnected Operating Requirements****504 Discontinuance of Parallel Operation**

The producer shall discontinue parallel operation when requested by Chugach:

- To facilitate maintenance, test, or repair of utility facilities;
- During system emergencies;
- When the producer's generating equipment is interfering with Chugach customers and/or other power producers connected to the Chugach electric power system grid;
- When an inspection of the producer's generating equipment reveals either a lack of adequate equipment maintenance necessary to protect Chugach's electric power system or conditions that could be hazardous to the Chugach system.

When a producer-owned interconnection transformer exists as part of non-utility generation facilities, and when a producer discontinues parallel operation with the Chugach system, the producer-owned transformer shall be disconnected from Chugach's system. The producer-owned interconnection transformer shall not be re-connected to Chugach's system until such time as the non-utility generator is ready to resume service.

**505 Islanded Operations**

Unless expressly approved by Chugach, non-utility generators may not operate in an islanded mode with any portion of the Chugach electric power system. Once the Chugach circuit(s) connecting the producer's generating facility is de-energized, for any reason, the producer shall disconnect from the Chugach system and shall not be permitted to reconnect to it until Chugach has re-energized its system, as detailed in Section 511.

**506 Voltage Levels & Fluctuations**

Per IEEE Std. 1547, Parts 4.1 and 4.2, the producer's voltage (at the point of interconnection) and interconnection equipment shall adhere to the ratings and recommendations contained in the most recent ANSI C84.1 Standard. When operating in parallel with the Chugach system, the producer's voltage must be maintained within  $\pm 5$  percent of the standard Chugach system voltage at the point of interconnection.

Voltage fluctuations may be noticeable as visual lighting variations (flicker) and can cause damage to, or disrupt the operation of electronic equipment. The producer shall adhere to the requirements of IEEE Std. 1547, Part 4.3 regarding power quality.

**Section 500 - Interconnected Operating Requirements****507 Voltage Regulation and Reactive Power Requirements**

Operation of the producer's generator must not adversely affect the voltage regulation of Chugach's electric power system. Per IEEE Std. 1547, Part 4.1.1, the producer shall not actively regulate Chugach system voltage at the point of interconnection, and shall not cause Chugach system voltage to deviate from the requirements of ANSI C84.1, Range A.

Facilities with synchronous generators shall provide sufficient generator reactive power capacity to withstand normal voltage changes on the Chugach system. The generator reactive power requirements, voltage regulation, and transformer ratio settings will be jointly determined by Chugach and the producer to ensure intersystem coordinating and operating capability. Producers are required to provide their own reactive power requirements in order to generate within the specified power factor range.

The parallel operation of the producer's generating equipment with the Chugach system will not, under any circumstance, be permitted to cause any reduction in the quality of service being provided to Chugach customers.

**508 Generator Droop Requirements**

Governor characteristics shall be set to provide a 5 percent droop characteristic (a 0.15 Hz change in the generator speed will cause a 5 percent change in the generator load). Governors must be operated unrestrained to ensure that droop will not exceed 5% and that system frequency is properly regulated.

**509 Harmonics**

Harmonic distortion is defined as the ratio of the root mean square (rms) value of the harmonic to the rms value of the fundamental voltage or current (refer to IEEE Standard 519). Distortion of the harmonic content of voltage and/or current waveforms can cause telecommunication interference, disable solid-state equipment, overheat transformers, and create resonant overvoltages. In order to protect Chugach's equipment as well as the equipment of Chugach's customers from damage, harmonic distortion must be maintained within acceptable limits.

The producer shall not exceed the harmonic limits for electric current contained in IEEE Std. 1547, Part 4.3.3. In addition, the producer shall not produce voltage distortion in excess of the limits specified in IEEE Std. 519, Section 11.5. Chugach advises that the producer consider and account for harmonics in the early stages of facility planning and design.

If excessive harmonic distortion is suspected, voltage and current distortion measurements will be performed to determine whether the producer's equipment is a source of, or contributor to, excessive distortion. If the producer's facility is found to be the source of excessive harmonic distortion, the producer will be billed for the investigation costs, and will be held responsible for corrective action to bring the harmonic content within the referenced limits.

Section 500 - Interconnected Operating Requirements**510 Power Factor Requirements**

Chugach requires that all interconnected non-utility generation maintain power factors within the range of 0.95 lagging and 0.95 leading at the point of interconnection. Producers are responsible for providing the reactive power necessary to maintain power factors within the specified range when operating in parallel with Chugach's electric power system. In certain cases, producers may contract with Chugach for the provision of ancillary services for reactive power support in order to maintain operation within the specified limits.

**511 Coordination with the Chugach Protective System**

The proper coordination of the producer's interconnection protective functions with the Chugach protection system is of critical importance to the safety and reliability of Chugach's electric power system. Accordingly, parallel operation will not be authorized or allowed until all required interconnection protective functions and settings have been reviewed and approved by Chugach, and properly coordinated with the Chugach protective system. Specifics on required protective functions and settings can be found in Sections 404, 407, 408, 409, 410, 414, 417, 418, and 419.

Because most short circuits (faults) on overhead lines are of a temporary nature, Chugach employs the use of automatic circuit reclosers (ACR) to automatically reclose circuit breakers on faulted lines one or more times within a few electrical cycles after they have tripped. This practice improves the continuity of service to Chugach customers by allowing temporary faults to clear before primary protective devices operate to de-energize all or portions of the circuit.

The protective relays specified by Chugach for parallel generation interfaces are intended to disconnect the producer's generation from faulted or isolated lines before reclosing occurs.

To ensure that Chugach's system protection equipment operates properly, the producer's protective equipment shall be set to sense Chugach system fault conditions and discontinue parallel operation with Chugach before Chugach automatic circuit reclosing occurs. **The producer shall not resume parallel operation until:**

- A) A period of five (5) minutes has transpired following the initial sensing of a fault condition, or,
- B) Chugach provides authorization to resume parallel operation.

**Section 500 - Interconnected Operating Requirements****512 Interconnection Equipment Maintenance**

The producer shall maintain its interconnection and interface equipment in good order. Chugach reserves the right to inspect all such equipment at any time. Chugach also reserves the right to inspect the producer's facilities whenever it appears that the producer is operating in a manner unacceptable or hazardous to the integrity of the Chugach system, or outside of the operating limits specified in these guidelines or contained in any interconnection agreements.

The producer is responsible for ensuring and maintaining the safe and operational condition of all interconnection equipment located on the producer's side of the interconnection. Maintenance records, procedures, and results shall be made available for Chugach's review and records as required. Depending upon the characteristics and utilization characteristics of the facility, Chugach may elect to observe and inspect maintenance work in order to assure the safety and integrity of the interconnection. For large generation installations, specific scheduling and interval requirements for interconnection equipment maintenance may be formulated within interconnection agreements. Such maintenance requirements may be based on equipment duty, number of operations, ambient conditions, etc. The producer shall coordinate and schedule maintenance on interconnection equipment with Chugach to ensure the safety of Chugach personnel and to minimize the disruption of electric service to Chugach customers.

**513 Protective Systems Functional Testing**

The producer's facilities shall meet the testing criteria contained in IEEE Std. 1547.1 "IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems" and the producer shall grant Chugach the right to observe functional testing of the producer's facilities.

Periodic functional testing of protective equipment (i.e., circuit breakers, switches, disconnect devices, protective relaying, etc.) shall be defined and coordinated with Chugach within an interconnection agreement between Chugach and the producer. Generally, functional testing of protective relay settings and interconnection circuit breaker operations shall be performed by the producer every three (3) years. Documented test results shall be provided to Chugach within five (5) working days after the completion of tests. The producer is responsible to ensure that protective relaying and control systems have available and accessible sensing input terminals or test ports, in order to perform and validate functional testing (see Section 414: Protection & Control System Testing Conformance). The producer shall grant Chugach the right to review and modify the functional testing requirements, as necessary, during the life of the facility.

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APPENDICES

APPENDIX A

APPLICATION FOR INTERCONNECTION:  
CLASS A - NET FACILITIES

**CHUGACH ELECTRIC ASSOCIATION, INC.**  
**Interconnection Application for Non-Utility Generation:**  
**Class A - NET Facilities**

**Who Should File This Application:** Any customer wishing to operate electrical generation facilities, rated up to 25 kVA, interconnected with the Chugach electric power system, and meets the eligibility requirements of the State of Alaska Net Metering Standards, 3 AAC 50.920. This application should be completed as soon as possible and returned to Chugach’s Engineering Division Service Extension Coordinator in order to begin processing the request.

**Application Use:** This application is used by Chugach to perform an interconnection study to determine the specific interconnection requirements at the applicant’s proposed facility location. Should additional information be required to perform this study, the applicant shall provide such as requested by Chugach.

**Further Action:** The preliminary interconnection study performed by Chugach will determine the need for submittal of a final interconnection application for Non-Utility Generation.

<b>OWNER/APPLICANT INFORMATION</b>		
Company :		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>PROPOSED LOCATION OF GENERATING FACILITIES AND INTERCONNECTION</b>		
Address:		
<b>PROJECT DESIGN / ENGINEERING</b>		
Company:		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>ELECTRICAL CONTRACTOR</b>		
Company:		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>GENERATOR DATA</b>		
Manufacturer:		Model:
Type (Synchronous, Induction, Converter, etc.):		Phases (1 or 3):
Rated Output:	Windings (Delta, Wye):	Frequency:
Rated Power Factor (%):	Rated Voltage (Volts):	Rated Current (Amperes):
Prime Energy Source (natural gas, steam, hydro, etc.):		
<b>ESTIMATED LOAD INFORMATION</b>		
The following information will be used to help properly design the applicant’s interconnection. This information is not intended as a commitment or contract for billing purposes.		
Minimum anticipated load (generation not operating) kW:		kVA:
Maximum anticipated load (generation not operating) kW:		kVA:
<b>ESTIMATED CONSTRUCTION START/COMPLETION DATES</b>		
Start Date:		Completion Date:



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APPENDICES

APPENDIX B

APPLICATION FOR INTERCONNECTION:  
CLASS A AND B FACILITIES

**CHUGACH ELECTRIC ASSOCIATION, INC.**  
**Interconnection Application for Non-Utility Generation:**  
**Class A and B Facilities**

**Who Should File This Application:** Any customer wishing to operate electrical generation facilities, rated up to 100 kVA, interconnected and operating in parallel with the Chugach electric system. This application should be completed as soon as possible and returned to Chugach’s Engineering Division Service Extension Coordinator in order to begin processing the request.

**Application Use:** This application is used by Chugach to perform an interconnection study to determine the specific interconnection requirements at the applicant’s proposed facility location. Should additional information be required to perform this study, the applicant shall provide such as requested by Chugach.

**Further Action:** The preliminary interconnection study performed by Chugach will determine the need for submittal of a final interconnection application for Non-Utility Generation.

<b>OWNER/APPLICANT INFORMATION</b>		
Company :		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>PROPOSED LOCATION OF GENERATING FACILITIES AND INTERCONNECTION</b>		
Address:		
<b>PROJECT DESIGN / ENGINEERING</b>		
Company:		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>ELECTRICAL CONTRACTOR</b>		
Company:		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>GENERATOR DATA</b>		
Manufacturer:		Model:
Type (Synchronous, Induction, Converter, etc.):		Phases (1 or 3):
Rated Output:	Windings (Delta, Wye):	Frequency:
Rated Power Factor (%):	Rated Voltage (Volts):	Rated Current (Amperes):
Prime Energy Source (natural gas, steam, hydro, etc.):		
<b>ESTIMATED LOAD INFORMATION</b>		
The following information will be used to help properly design the applicant’s interconnection. This information is not intended as a commitment or contract for billing purposes.		
Minimum anticipated load (generation not operating) kW:		kVA:
Maximum anticipated load (generation not operating) kW:		kVA:
<b>ESTIMATED CONSTRUCTION START/COMPLETION DATES</b>		
Start Date:		Completion Date:

Form No. MLP-1A-02 (7/2010) Interconnection Application for Non-Utility Generation - Class A and B



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APPENDICES

APPENDIX C

APPLICATION FOR INTERCONNECTION:  
CLASS C AND D FACILITIES

**CHUGACH ELECTRIC ASSOCIATION, INC.**  
**Interconnection Application for Non-Utility Generation:**  
**Class C and D Facilities**

**Who Should File This Application:** Any customer wishing to operate electrical generation facilities, rated 100 kVA to 5000 kVA, interconnected and operating in parallel with the Chugach electric system. This application should be completed as soon as possible and returned to Chugach’s Engineering Division, Service Extension Coordinator in order to begin processing the request.

**Application Use:** This application is used by Chugach to perform an interconnection study to determine the specific interconnection requirements at the applicant’s proposed facility location. Should additional information be required to perform this study, the applicant shall provide such as requested by Chugach.

**Design Information Submittal:** In addition to the items listed in this form, please include the design information submittal items as outlined in Section 301: Design Documentation and Information of Chugach’s Interconnection and Operating Requirements for Non-Utility Generation.

<b>OWNER/APPLICANT INFORMATION</b>		
Company :		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>PROPOSED LOCATION OF GENERATING FACILITIES AND INTERCONNECTION</b>		
Address:		
<b>PROJECT DESIGN / ENGINEERING</b>		
Company:		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>ELECTRICAL CONTRACTOR</b>		
Company:		
Representative:	Phone Number:	Fax Number:
Title:		
Mailing Address:		
<b>ESTIMATED LOAD INFORMATION</b>		
The following information will be used to help design the Chugach-Producer interconnection. This information is not intended as a commitment or contract for billing purposes.		
Minimum anticipated load (generation not operating) _____ kVA _____ Duration (indicate hours, minutes, etc.)		
Maximum anticipated load (generation not operating) _____ kVA _____ Duration (indicate hours, minutes, etc.)		

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(Complete all applicable items. Copy this page as required for additional generators.)			
<b>SYNCHRONOUS GENERATION DATA</b>			
Unit Number:	Total number of units with listed specifications on site:		
Manufacturer:			
Type:	Manufacture Date:	Windings (Delta, Wye):	
Serial Number (each):			
Phases: 1 or 3	Speed (RPM):	Frequency (Hz):	
Rated Output (each unit) Kilowatt:		Kilovolt-Ampere:	
Rated Power Factor (%):	Rated Voltage (Volts):	Rated Current (Amperes):	
Field Voltage (Volts):	Field Current (Amperes):	Motoring Power (kW):	
Synchronous Reactance:	Xd :	Xq:	% on kVA base
Transient Reactance:	Xd':	Xq':	% on kVA base
Subtransient Reactance:	Xd'':	Xq'':	% on kVA base
Zero Sequence Reactance:	Xo:	% on kVA base	
Negative Sequence Reactance:	X2:	% on kVA base	
Neutral Grounding Impedance:	Rn:	Xn:	% on kVA base
Inertia constant, H (joules/VA):			
I2t or K (heating time constant):			
Exciter data:			
Governor data:			
Additional Information:			
<b>INDUCTION GENERATOR DATA</b>			
Unit Number:	Total number of units with listed specifications on site:		
Manufacturer:			
Type:	Manufacture Date:	Windings (Delta, Wye):	
Serial Number (each):	Speed (RPM):		
Rotor Resistance, Rr, (Ohms):	Stator Resistance, Rs,(Ohms):		
Rotor Reactance, Xr, (Ohms):	Stator Reactance, Xs, (Ohms):		
Magnetizing Reactance, Xm, (Ohms):			
Design Letter:	Frame Size:		
Exciting Current:	Temp Rise (deg C):	H constant, (joules/VA):	
Rated Output (kW):			
Reactive Power Required	kVAR (no load):	kVAR (full load):	
If this is a wound-rotor machine, describe any external equipment to be connected (resistor, rheostat, power converter, etc.) to rotor circuit, and circuit configuration. Describe ability, if any, to adjust generator reactive output to provide power system voltage regulation.			
Additional Information:			

<b>PRIME MOVER</b> (Complete all applicable items)			
Unit Number:	Type:		
Manufacturer:			
Serial Number:	Manufacture Date:		
Rated Horsepower (H.P.):	Max. Horsepower (H.P.):	Inertia constant, (lb.-ft <sup>2</sup> ):	
Energy Source (fuel; hydro, steam, natural gas, etc.):			
<b>TRANSFORMER</b> (If applicable)			
Manufacturer:	kVA:		
Date of Manufacture:	Serial No.		
High Voltage: kV	Connection: delta wye	Neutral solidly grounded?	
Low Voltage: kV	Connection: delta wye	Neutral solidly grounded?	
Transformer Impedance, Z:	% on	kVA base	
Transformer Resistance, R:	% on	kVA base	
Transformer Reactance, X:	% on	kVA base	
Neutral Grounding Impedance:	Rn :	Xn :	% on kVA base
<b>POWER CONVERTER DATA</b> (If applicable)			
Manufacturer:	Model:		
Date of Manufacture:	Serial No.		
Rated Power Factor (%):	Rated Voltage (Volts):	Rated Current (Amperes):	
Converter Type (Ferro resonant, step, pulse-width modulation, etc.):			
Type of commutation: forced line	Minimum Short Circuit Ratio required:		
Minimum voltage for successful commutation:			
Current Harmonic Distortion:	Maximum Individual Harmonic (%):		
	Maximum Total Harmonic Distortion (%):		
Voltage Harmonic Distortion:	Maximum Individual Harmonic (%):		
	Maximum Total Harmonic Distortion (%):		
Describe capability, if any, to adjust reactive output to provide voltage regulation:			
<b>NOTE:</b> Attach all available calculations, test reports, and oscillographic prints showing inverter output voltage and current waveforms.			
<b>POWER CIRCUIT BREAKER</b> (If applicable)			
Manufacturer:	Model:		
Rated Voltage (kilovolts):	Rated Ampacity (Amperes):		
Interrupting Rating (Amperes):			BIL Rating:
Interrupting Medium (vacuum, oil, gas, etc.)	Insulating Medium (vacuum, oil, gas, etc.)		
Control Voltage (Closing):	(Volts)	AC	DC
Control Voltage (Closing):	(Volts)	AC	DC Battery Charged Capacitor
Close Energy:	Spring	Motor	Hydraulic Pneumatic Other
Trip Energy:	Spring	Motor	Hydraulic Pneumatic Other
Bushing Current Transformer (Max ratio):	Relay Accuracy Class:		
Multi Ratio?	No	Yes	If yes, available taps:
<b>ESTIMATED CONSTRUCTION SCHEDULE</b>			
Start Date:	Completion Date:		

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APPENDICES

APPENDIX D. CODES AND STANDARDS

## APPENDICES

### **Codes and Standards**

This appendix is a partial list of codes and standards referenced in the Interconnection Requirements.

#### The National Fire Protection Association:

- The National Electrical Code (NEC), (NFPA-70)

#### Institute of Electrical and Electronics Engineers (IEEE)

- ANSI/IEEE C37.90, IEEE Standard for Relay Systems Associated with Electric Power Apparatus.
- ANSI/IEEE C37.95, IEEE Guide for Protective Relaying of Utility-Consumer Interconnections.
- ANSI C62.1, Surge Arresters for AC Power Circuits.
- ANSI C84.1, American National Standards for Electric Power Systems and Equipment Ratings (60 Hertz). Establishes nominal voltage ratings and operating tolerances for 60 Hz electric power systems from 100 V through 230 kV.
- IEEE Std. 142, IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems.
- IEEE Std. 242 Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems.
- IEEE 519, IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems.
- ANSI/IEEE Std. 929, Recommended Practice for Utility Interface of Photovoltaic (PV) Systems.
- IEEE 1547, Standard for Distributed Resources Interconnected with Electric Power Systems.
- IEEE P1547.1, Standard for Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.
- IEEE P1547.2, Application Guide for IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems.
- IEEE P1547.3, Guide for Monitoring Information Exchange and Control of DR Interconnected with Electric Power Systems,
- IEEE P1561, Draft Guide for Sizing Hybrid Stand-Alone Energy Systems.

## APPENDICES

### **Codes and Standards**

#### National Electrical Testing Association (NETA)

NETA promotes the independent electrical testing industry by establishing testing standards and specifications and training and certifying testing technicians.

#### National Electrical Manufacturers Association (NEMA)

A nonprofit trade association supported by the manufacturers of electrical apparatus and supplies. NEMA is engaged in standardization to facilitate understanding between the manufacturers and users of electrical products.

#### Underwriters Laboratories (UL)

UL is a private, not-for-profit organization that has evaluated products, materials and systems in the interest of public safety since 1894. UL has become the leading safety testing and certification organization in the U.S., and its label is found on products ranging from toaster ovens to inverters to some office furniture. Although UL writes the testing procedures, other organizations may do the actual testing and certification of specific products. In addition to UL, other testing labs such as ETL SEMKO (ETL), and the Canadian Standards Association (CSA) are widely recognized listing agencies for electrical components.

- UL Standard 1741, Inverters, Converters and Controllers for Use in Independent Power Systems, covers requirements and testing procedures for inverters, converters, charge controllers, and output controllers intended for use in standalone (not grid connected) or utility-interactive (grid connected) power systems. Utility interactive inverters and converters are intended to be installed in parallel with an electric distribution system to supply common loads. UL 1741 comports to IEEE Std. 929 to cover inverters used for sources other than photovoltaics and to cover controllers that might provide similar capabilities for synchronous and induction machines.
- UL Standard 200, Standard for Safety Stationary Engine Generator Assemblies, covers stationary engine generator assemblies, including micro-turbines, rated at 600 volts or less.

## Glossary

For industry standard definitions of electric industry terminology not contained in this glossary, please refer to the IEEE Standard Dictionary of Electrical and Electronic Terms, IEEE Standard 100.

### A

**Abnormal Voltage:** Voltage that is outside of the standard Chugach nominal voltage level.

**AC:** The abbreviation for alternating current.

**Access, Accessible:** “Access” means capability of being reached quickly for operating, reading, repairing, removing, testing, inspecting, or installing meters, transformers, switches, conductors, electrical enclosures, and related equipment without requiring those for whom access is required to climb over or remove obstacles, to unlock doors, to dismantle fences or gates, and so forth. Accessible equipment is not guarded by architectural enhancements, dogs, elevation, locks, parked vehicles, structures, or other impediments.

**Active Anti-Islanding Scheme:** A control scheme installed within a generating facility that senses and prevents the formation of an unintended island.

**Ampere (Amp):** The practical unit of electric current. One ampere is the current caused to flow through a resistance of one ohm by one volt.

**ANSI:** American National Standards Institute

**Applicant:** The entity submitting an application for interconnection pursuant to these requirements.

**Application:** A Chugach-approved standard form submitted to Chugach for interconnection of a generating facility.

**Approved:** As used in these requirements, the term “approved” means authorized, sanctioned, permitted, or specified by Chugach. In most cases, the approval will be in written or published form.

**Area Electric Power System (Area EPS):** an electric power system that serves Local EPSs. In Chugach’s service area, Chugach is the Area EPS.

**Automatic:** Self-acting, operated by its own mechanism when actuated by some impersonal influence as, for example, a change in current strength; not manual; without personal intervention.

#### **Automatic Circuit Recloser:**

(A) A self-controlled device for automatically interrupting and reclosing an alternating current circuit with a predetermined sequence of opening and reclosing, followed by resetting, hold closed or lockout (ANSI C37.60).

(B) A relay that controls the automatic reclosing and locking out of an AC circuit interrupter.

**Automatic Control:** An arrangement of electrical controls which provide for opening and/or closing in an automatic sequence and under predetermined conditions; the switches which then maintain the required character of service and provide adequate protection against all usual operating emergencies.

**Available Fault Contribution:** The maximum current that can be supplied to a fault (short-circuit).

## Glossary

### B

**Back Feed:** A condition where a device introduces voltage and/or current onto the system that is normally the source.

**Bi-directional Metering:** Metering of the power delivered by Chugach to the customer and the power produced by the customer and received by Chugach. Bi-directional meters deployed by Chugach are solid state, billing quality devices meeting the requirements of ANSI C12.1 and ANSI C12.10, and are equipped with separate registers for delivered power and received power. See Net Energy Metering.

**Block-Loaded:** Loading of a generator in discrete steps to a specific power level.

**Breaker:** See ‘Circuit Breaker’.

### C

#### Capacity:

- (1) The amount of current, in amperes of electric current a wire will carry without becoming unduly heated;
- (2) The capacity of a machine, apparatus, or device, typically given in volt-amperes (VA) or watts, the maximum of which it is capable under existing service conditions;
- (3) The load for which a generator, turbine, transformer, transmission circuit, apparatus, station, or system is rated.

**Certification; Certified; Certificate:** The documented results of a successful Certification Test.

**Certified Equipment:** Equipment that has passed all required Certification Tests.

**Chugach:** Chugach Electric Association, Inc.

**Circuit:** An interconnection of electrical elements.

**Circuit Breaker:** A switching device capable of making, carrying, and breaking currents under normal circuit conditions and also making, carrying for a specified time, and breaking currents under specified abnormal conditions, such as those of a short circuit. As it relates to interconnected operation, this is the “paralleling device” referenced in IEEE Standard 1547.

**Clearance (Working):** As it relates to Chugach’s electric power system, a clearance is a condition achieved when all known hazardous energy sources are isolated, a zero energy state is present, energy control points are locked, or physical barriers are in place and the control points are properly red-tagged. A clearance ensures the isolation of all electrical energy sources and/or provides a mechanical block of other energy sources from personnel when equipment or systems are taken out of service for inspection, maintenance, modification or repairs. Clearances can only be issued by Chugach’s Distribution and Power Dispatch Center.

## Glossary

**Cogeneration Facility:** Equipment used to produce electric energy and forms of useful thermal energy (such as heat or steam) used for industrial, commercial, heating, or cooling purposes through the sequential use of energy.

**Control and Protection:** “Control” refers to the methods and means of governing the performance of the generating facilities. “Protection” refers to the system of devices used to detect abnormal operating conditions and to initiate tripping of apparatus.

**Converter:** A machine or device for changing alternating current (AC) power to Direct Current (DC) power or vice versa, or from one frequency to another.

**Current:** See ampere.

## D

**DC:** The abbreviation for direct current.

**Dedicated Transformer; Dedicated Distribution Transformer:** A transformer that provides electricity service to a single customer whether or not that customer has non-utility generation facilities.

**Demand:** The rate of consumption of energy, usually defined as the average rate over a specified interval of time. Demand may be expressed in kilowatts, kilovolt-amperes, kilovars, or other suitable units.

**Demand, Maximum:** The highest demand measured over a selected period of time, such as one month. A meter equipped with a demand register measures the maximum average power over an interval of time as a basis for billing.

**Direct Transfer Trip:** Transfer of a signal to trip circuit breakers at the remote end of a line.

**Disconnect Device:** A device whereby the conductors of a circuit can be disconnected from their source of supply (IEEE 100-1984).

**Distortion Factor (Harmonic Factor):** “Distortion Factor” is the ratio of the root mean square of the harmonic content to the root-mean-square of the fundamental quantity, expressed as a percent of the fundamental.

**Distributed Generation (DG):** Electric generation facilities that connect to Chugach’s electric power system through a point of common coupling (PPC).

**Distributed Resources (DR):** Sources of electric power that are not directly connected to a bulk power transmission system. DR includes both generators and energy storage technologies.

**Distribution Service:** All services required by, or provided to, a customer pursuant to the approved tariffs of Chugach.

## Glossary

**Distribution System:** The part of Chugach's system including substations, electrical wires, equipment, and other facilities which operate at voltages suitable for delivery of service directly to customers.

**Disturbance:** A planned event (e.g., fault, sudden loss of load or generation, breaker operations, etc.) that produces an abnormal system condition.

**Droop:** The slope of the prime mover's speed-power characteristic curve. The speed droop, typically five (5) percent, enables interconnected generators to operate in parallel with stable load division.

### E

**Electric Generator:** A machine that transforms mechanical power into electric power. (Refer to Generator).

**Electric Power System (EPS):** The electric power system owned and operated by Chugach.

**Electrical Supply Grid:** The system of interconnected generation stations, transmission lines, and distribution systems used to deliver electric power.

**Emergency:** An "emergency" exists when imminent danger to life is threatened or significant and substantial damage to Chugach, Municipal, or personal property is imminent. See System Emergency.

**Energize:** To apply voltage to a circuit or piece of equipment; to connect a de-energized circuit or piece of equipment to a source of electric energy.

**External Disconnect Switch:** An interconnection disconnect device placed at a location external to the customer's premises. The term is usually associated with a Class A-NET metering facility. See Interconnection Disconnection Device.

### F

**Fault:** An unintentional short circuit on an electrical system, between phases or between phase(s) and ground, characterized by high currents and low voltages.

**Fault Current:** A current that flows from one conductor to ground or another conductor, owing to an abnormal connection (including an arc) between the two.

**Feeder:** A set of conductors originating at a main distribution center or substation, supplying one or more distribution branch circuits.

**Flicker:** Impression of fluctuating brightness or color, occurring when the frequency of the observed variation lies between a few hertz (cycles per second) and the flicker threshold (the frequency of intermittent stimulation of the eye at which flicker disappears).

## Glossary

**Forced Outage:** Any outage resulting from electrical equipment failure, control systems malfunction, a design defect, operator error, or failure of mechanical systems related to the electrical output of a generating facility. A breakdown of the mechanical or electrical equipment that fully or partially curtails the electrical output of the generating facility.

**Frequency:** The number of cycles occurring in a given interval of time (usually 1 second) in an electric current. Frequency is commonly expressed in hertz.

**Frequency Deviation:** A change in frequency from 60 hertz caused by a temporary imbalance of generation and load.

**Fundamental Voltage:** As used in these requirements, the “fundamental voltage” is the voltage level at which an inverter-based interconnection system is designed to operate. The use of the term “fundamental voltage” is based on information presented in IEEE Std. 1547, Part 5.1.2.C.

## G

**Gang-Operated:** A multiple pole switch in which all poles are operated simultaneously.

**Generating Facility:** A facility wherein electric energy is produced from some other form of energy by means of a suitable converting apparatus, including the generator and all associated equipment owned, maintained, and operated by the producer.

**Generator:** The physical electrical equipment that produces electric power.

**Generator Output Metering:** Metering of the gross output of electrical energy and/or power produced by a generator.

**Generator Reactive Power Capability:** The amount of reactive power (VARs) that a generator can produce or absorb from the electric system to which it is connected.

**Grid:** A term used by an electric utility to refer to its transmission and/or distribution network.

**Gross Nameplate Rating:** The total gross generating capacity of a generator or generating facility as designated by the manufacturer of the generator(s).

**Ground:** A conducting connection, whether intentional or accidental, between an electric circuit or equipment and earth.

**Grounding Conductor:** A conductor used to connect any equipment device, or wiring system, with a grounding electrode or electrodes.

**Grounding Electrode:** A conductor embedded in the earth, used for maintaining ground potential on conductors connected to it and for dissipating current conducted to it into the earth.

**Ground Fault:** An unintentional electric current flow between one or more energized conductors and the ground.

## Glossary

### H

**Harmonic:** A sinusoidal component of a periodic wave or quantity having a frequency that is an integral multiple of the fundamental frequency.

**Harmonic Distortion:** Periodic distortion of the sine wave. See Distortion Factor.

**Hertz (Hz):** The term denoting cycles per second. See Frequency.

**Host Load:** Electrical power that is consumed by the customer at the property on which the generating facility is located.

**Hz:** Hertz

### I

**IEEE:** Institute of Electrical and Electronics Engineers.

**Instrument Transformer:** A transformer that reproduces in its secondary circuit, in a definite and known proportion, the voltage or current of its primary circuit, with the phase relationship substantially preserved.

**Interconnection:** The physical electrical connection for parallel operation of the producer's generating facility with the Chugach electric system.

**Interconnection Disconnect Device:** An electrical disconnect device used to isolate non-utility generation equipment from Chugach's electric power system. The interconnection disconnect device serves as a visible open which is critical to establishing working clearances for maintenance and repair work by utility personnel. Where an interconnection disconnect device is external to a customer's premises, it is often referred to as the external disconnect switch. See External Disconnect Switch.

**Interconnection Facilities:** The electrical wires, switches and related equipment that are required in addition to the facilities required to provide electric distribution service to a customer to allow the interconnection of a generating facility to the electric power system. Interconnection facilities may be integrated into a generating facility or provided separately. Interconnection facilities may be connected to either side of a point of common coupling, as appropriate to their purpose and design.

**Interconnection Study:** A study to establish the requirements for interconnection of a generating facility.

**Interrupting Capacity:** The amount of current a switch or circuit breaker can safely interrupt.

**Interruption:** The loss of electrical supply to one or more consumers or facilities.

**Inverter:** A device that converts direct current (DC) power to alternating current (AC) power.

**Island, Islanded:** A condition in which a portion of the Chugach electric power system is, or becomes, separated from the rest of the system, and the separated portion is energized by a local non-utility generator. See Non-islanding.

## Glossary

### K

**KV (kV):** The common abbreviation for kilovolts (equal to 1,000 volts). See Volt.

**KVA (kVA):** The common abbreviation for kilovolt-ampere (equal to 1,000 volt-amperes). The term “kVA” is frequently used to indicate the rated capacity of electrical equipment. See Volt-Ampere.

**KVAR (kVAR):** The common abbreviation for kilovolt-amperes reactive (equal to 1,000 volt-amperes reactive). See Reactive Volt-Ampere.

**KW (kW):** The common abbreviation for kilowatts (equal to 1,000 watts). See Watt.

**KWH (kWh):** The common abbreviation for kilowatt-hours (equal to 1,000 watt hours). See Watt-Hour.

### L

**Leading Power Factor:** A “leading power factor” occurs when reactive power flows in the opposite direction of real power. A generator with a leading power factor supplies real power (watts) while absorbing reactive power (VARs). Conversely, a load having a leading power factor absorbs real power while supplying reactive power.

**Letter of Agreement:** An agreement between Chugach and a producer that gives certain rights and obligations to effect or end an interconnection.

**Line:** As used in these requirements, a “line” is the set of conductors of an electric transmission or distribution circuit. Single-phase lines at primary voltage use two conductors in a typical circuit. Three-phase lines use either three conductors (delta) or four conductors (wye) in a typical circuit.

**Line Section:** That portion of Chugach’s electric power system connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line.

**Log:** A computer file, book, or loose-leaf sheets for recording all station operations, clearances, readings, ratio reports, and other pertinent active daily data.

**Losses:** Energy that is dissipated before it accomplishes useful work.

### M

**Manual Disconnect Switch:** A “manual disconnect switch” is a device used to disconnect a circuit from the source of power. A manual disconnect switch is operated non-automatically by the direct action of a person.

**MW:** The common abbreviation for megawatts (equal to 1,000,000 watts). See Watt.

**Metering:** The measurement and recording of electrical energy (watt-hours) at a point specified by these requirements. See Bi-directional Metering, Generator Output Metering, and Net Energy Metering.

## Glossary

**Metering Equipment:** All equipment related to the metering of electrical energy either delivered to, or received from, the customer and/or producer, including, but not limited to meter socket enclosures, service termination enclosures, CT cabinets, meter disconnects, and any other equipment necessary for utility-style meters.

**MOA:** Municipality of Anchorage

**Momentary Parallel Operation:** The interconnection of a generating facility to Chugach's electric power system for one second (60 cycles) or less.

## N

**Nationally Recognized Testing Laboratory (NRTL):** A laboratory accredited to perform the certification testing requirements under these guidelines.

**NEC:** National Electrical Code

**NESC:** National Electrical Safety Code

**Neutral:** A system conductor other than a phase conductor that provides a return path for current to the source. In Chugach's system, neutral conductors are multi-grounded conductors and are typically at zero potential with reference to the earth.

**Net Energy Metering:** Metering for the receipt and delivery of electricity between a producer and Chugach pursuant to RCA rules. Over a given time frame (typically a month) the difference between these two values yields either net consumption or surplus. For the purposes of these requirements, net energy metering and bi-directional metering are synonymous terms. See Bi-directional Metering.

**Net Nameplate Rating:** The Gross Nameplate Rating minus the consumption of electrical power of a generator or generating facility as designated by the manufacturer of the generator.

**Network Service:** More than one electrical feeder providing distribution service at a point of common coupling.

**Non-Export; Non-Exporting:** Designed to prevent the transfer of electrical energy from the producer to Chugach.

**Non-Islanding:** Intended to prevent the existence of an island. Non-islanding devices must be designed to detect and disconnect from an unintended island. Reliance solely on under/over voltage and frequency trip is not considered sufficient to qualify as non-islanding. See Island, Islanded.

**Non-Utility Generation:** Generation facilities that are owned and operated by a person or company other than an electric utility.

## Glossary

### O

**Ohm:** The standard unit of resistance of an electric circuit; generally the resistance to the flow of electric current.

**One-Line Diagram:** An electrical schematic drawing which represents the phases of a three-phase electrical system as a single line.

**Open-Transition Mode:** A method of switching generation from one system to another without connecting the two systems. This typically is accomplished by employing a transfer switch with break before make contacts (breaks contact with one system before making contact to the other system).

**Outage:** A condition existing when a line or a station is de-energized.

**Output:** The energy delivered by a machine or piece of apparatus during its operation.

**Overvoltage:** Voltage higher than that desired or higher than that for which equipment in question is designed.

### P

**Paralleling Device:** The switchgear or circuit breaker, which is controlled by the producer's, interconnection control system. This is the producer's device, which establishes the physical electrical connection for parallel operation with the Chugach system.

**Parallel Operation:** The operation of a customer owned generator while electrically connected to the Chugach electric grid. Under this condition power can either flow from the Chugach system to the generating facility or vice versa. Parallel operation may be solely for the customer's operating convenience or for the purpose of delivering power to the Chugach electric power system.

**Point of Common Coupling (PCC):** The transfer point for electricity between the electrical conductors of Chugach and the electrical conductors of the producer.

**Point of Interconnection:** The point where the load or producer's conductors or those of their respective agents meet the Chugach electric power system (point of ownership change).

**Power, Active:** The time average of the instantaneous power over one period of the wave. For sinusoidal quantities in a two-wire circuit, it is the product of the voltage, the current, and the cosine of the phase angle between them. For non-sinusoidal quantities, it is the sum of all the harmonic components, each determined as above. In a polyphase circuit it is the sum of the active powers of the individual phases. See Watt.

**Power, Apparent:** The product of the root-mean-square current and root-mean-square voltage for any waveform. For sinusoidal quantities, apparent power is the square root of the sum of the squares of the active and the reactive powers. See Volt-Ampere.

## Glossary

**Power, Reactive:** For sinusoidal quantities in a two-wire circuit, reactive power is the product of the voltage, the current, and the sine of the phase angle between them with the current taken as reference. With non-sinusoidal quantities, it is the sum of all the harmonic components, each as determined above. In a polyphase circuit, it is the sum of the reactive powers of the individual phases. See Reactive Volt-Ampere.

**Power, Real:** The term “real power” is synonymous with the term “active power”. Real power or active power is measured in watts (W), kW, or MW. Real power used or transmitted over time is measured in kilowatt-hours (kWh) or megawatt-hours (MWh). See Power, Active.

**Power Factor:** The ratio of active power to apparent power. The power factor is considered to be at unity when the voltage and current are in phase.

**Primary Distribution System:** That part of Chugach’s electric power system that distributes power from Chugach’s substations to its distribution transformers at medium voltage levels.

**Producer:** One who produces electrical power and energy. In the context of these requirements, the term “producer” typically refers to the owner and/or operator of non-utility generation.

**Protection:** All of the protective relays and other equipment which is used to open the necessary circuit breakers to clear lines or equipment when faults or unacceptable operating conditions develop within the electric power system.

**Protective Devices:** Devices used to protect equipment during abnormal conditions. This includes protective relays, whose function is to detect power system conditions of an abnormal or dangerous nature. It also includes circuit breakers or other interrupting devices used to protect the generator, associated equipment, and the electrical system to which the generation is interconnected.

**Protective Relay:** A device whose function is to detect system faults, defective lines or apparatus, or other power system conditions of an abnormal or dangerous nature and to initiate appropriate control circuit action.

## R

**RCA:** Regulatory Commission of Alaska.

**Reactive Volt-Ampere:** The out-of-phase component of the total volt-amperes in a circuit which includes inductive or capacitive reactance. In an AC circuit, reactive volt-amperes are the product of the total volt-amperes and the sine of the angle between the current and voltage. The unit of reactive volt-ampere is the var. VARs may be considered as the imaginary part of apparent power, or the peak power flowing into a reactive load. By convention, positive reactive power is “absorbed” by an inductance and “generated” by a capacitance. Reactive power transferred over time is measured in VAR-hours (VARh). See Power, Reactive.

**Readily Accessible:** See Access, Accessible.

**Real Time (data):** Data reported as it happens, with reporting (update) intervals no longer than a few seconds.

## Glossary

**Reclose:** To again close a circuit breaker after it has opened by relay action.

**Reconductoring:** Replacing the conductor in an existing line. Typically, this involves replacement within higher capacity conductor, or installing an additional conductor in a line.

**Relay:** A device that is operative by a variation in the condition of one electric circuit to affect the operation of another device in the same or in another electric circuit.

**Resonant Overvoltages:** Overvoltages caused by harmonics that correspond to a natural resonant frequency of the system.

## S

**Secondary System:** The “secondary system”, also referred to as the secondary distribution system, is that part of the electric power system consisting of the secondary output of step-down transformers, service conductors, and utility metering equipment.

**Secondary Network:** A network supplied by several primary feeders suitably interlaced through the area in order to achieve acceptable loading of the transformers under emergency conditions and to provide a system of extremely high service reliability. Secondary networks usually operate at 600 V or lower.

**Separate System:** A generating system which has no capability or possibility of connecting to, and operating in parallel with, the Chugach electric power system.

**Setting (Protective Relay):** The values of current, voltage, or time at which a relay is adjusted.

**Shared Secondary:** The condition which occurs when a producer interconnects with Chugach on the secondary side of a distribution transformer, and other customers may also be connected to the secondary side of the same transformer.

**Short Circuit:** An abnormal connection (including an arc) of relatively low impedance, whether made accidentally or intentionally, between two points of different potential (IEEE 100-1984).

**Short Circuit Contribution Ratio (SCCR):** The ratio of a generating facility’s short circuit contribution to Chugach’s short circuit contribution for a three-phase fault at the high voltage side of the distribution transformer connecting that generating facility to Chugach’s electric power system.

**Single-Line Drawing:** See One-Line Diagram.

**Solid-State Equipment:** Equipment that contains electronic components that do not use vacuum or gas filled tubes. Discrete semiconductors (e.g., transistors, diodes, etc.), integrated circuits, or other static components such as resistors and capacitors are used for the electrical functioning of the equipment. Note: Equipment that uses a cathode ray tube for display purposes, such as a television or computer monitor, may still be considered solid-state if the other components within the equipment are solid-state.

## Glossary

**Stabilization, Stability:** The return to normalcy of Chugach's electric distribution system, following a disturbance. Stabilization is usually measured as a time period during which voltage and frequency are within acceptable ranges.

**Stiffness Ratio:** The ratio of system available fault current at the point of interconnection to the full load rated output current of the installation. Refer to IEEE Std. 1547.2-2008, Part 3.1.7 and 3.1.8 for information regarding stiffness ratio.

**Supervisory Control:** A system by which equipment is operated by remote control at a distance by means of some type of code transmitted by wire or electronic means.

**Switch:** A device for making, breaking, or changing the connections in an electric circuit.

**System:** The entire generating, transmitting, and distributing facilities of an electric supply utility.

**System Emergency:** An actual or imminent condition or situation, which jeopardizes the Distribution System Integrity. See Emergency.

**System Integrity:** The condition under which Chugach's electric power system is deemed safe and can reliably perform its intended functions in accordance with the policies and procedures of Chugach.

## T

**Telemetry (Telemetering):** Measurement with the aid of a communication channel that permits the measurement to be interpreted at a distance from the primary detector.

**Total Harmonic Distortion (THD):** This term can be used to define either the voltage or the current distortion factor. Total harmonic distortion is a measurement of all the harmonic distortion present on a particular circuit or piece of equipment. See Distortion Factor.

**Transfer Trip:** A form of remote trip in which a communication channel is used to transmit the trip signal from the relay location to a remote location.

**Transformer:** A "transformer" is a device which transfers electrical energy from one electric circuit to another at the same frequency through electromagnetic induction usually with changes of value of the voltage and current. Typically, transformers are used to transform the high voltage of a utility's electric power system to a lower utilization voltage level. See Step-Down Transformer. Transformers are also used to transform the low and medium voltage output of generators to a high voltage level for transmission purposes. See Step-Up Transformer.

**Transformer, Primary Side:** The "primary side of a transformer" is the source or input side and is usually energized at a high or medium voltage level.

**Transformer, Secondary Side:** The "secondary side of a transformer" is the load or output side and is usually energized at a low voltage level.

**Transformer, Step-Down:** A "step-down transformer" is a transformer with high or medium voltage input on the primary side which steps down the voltage to a lower utilization level.

## Glossary

**Transformer, Step-Up:** A “step-up transformer” is a transformer having an input voltage on the primary side lower than the output voltage on the secondary side. Typically, a step-up transformer is used to raise voltage to a level compatible with a utility’s transmission or distribution system voltage.

**Transient:** A change from the steady-state condition of voltage or current, or both. Transients can be caused by a lightning strike, a fault, or by switching operation, such as the opening of a disconnect switch, and may be readily transferred from one conductor to another by means of electrostatic or electromagnetic coupling (IEEE 100-1984).

**Transmission Line:** A line used for electric power transmission. A transmission line is distinguished from a distribution line by voltage level and by its function in the electric power system. Transmission lines are typically rated at 69 kV and above.

**Transmission System:** That part of Chugach’s electric power system that transmits power from Chugach’s generation facilities to, and between its substations at high voltage levels.

**Trip Indication:** A display or indication that a circuit breaker has tripped. This indication can be in the form of relay targets, annunciator alarms, sequence-of-events recorder logs, SCADA alarms, etc.

## U

**Undervoltage Protection:** Upon loss or reduction of voltage, the protection device, which interrupts power to the main circuit and maintains the interruption.

**Unintended Island:** The creation of an island, usually following a loss of a portion of Chugach’s electric power system, without the approval of Chugach.

**Uninterruptible Power Supply (UPS):** A power conditioning and supply system that provides a continuous source of power to equipment (e.g., computer systems) during short-term power outages or surges.

**Unsafe Operating Conditions:** Conditions that, if left uncorrected, could result in harm to personnel, damage to equipment, loss of system integrity or operation outside pre-established parameters required by an interconnection agreement.

## V

**VAR (var):** The unit of reactive power in an alternating current circuit equal to the square root of the difference between the squares of the apparent and the active powers. See Reactive Volt-Ampere and see Power, Reactive.

**Volt:** The practical unit of electromotive force, or potential difference. One volt will cause one ampere to flow when impressed across a one ohm resistor.

**Volt-Ampere (VA):** A unit of apparent power in an alternating current circuit equal to the product of volts and the total current which flows because of the voltage. In AC circuits with unity power factor, the volt-amperes and the watts are equal. In AC circuits at other than unity power factor, the volt-amperes equal the square root of watts squared plus reactive volt-amperes squared.

## Glossary

**Voltage Regulation:** The control of generator terminal voltage to a predetermined value. This is accomplished using a voltage regulator that controls the amount of current flowing into the generator field winding, which in turn affects the output voltage of the generator.

### W

**Watt:** The practical unit of active power which is defined as the rate at which energy is delivered to a circuit. It is the power expended when a current of one ampere flows through a resistance of one ohm. A watt represents a unit of real electric power as contrasted with a volt-ampere which represents a unit of apparent power.

**Watt-hour (Wh):** The practical unit of electric energy which is expended in one hour when the average power during the hour is one watt.

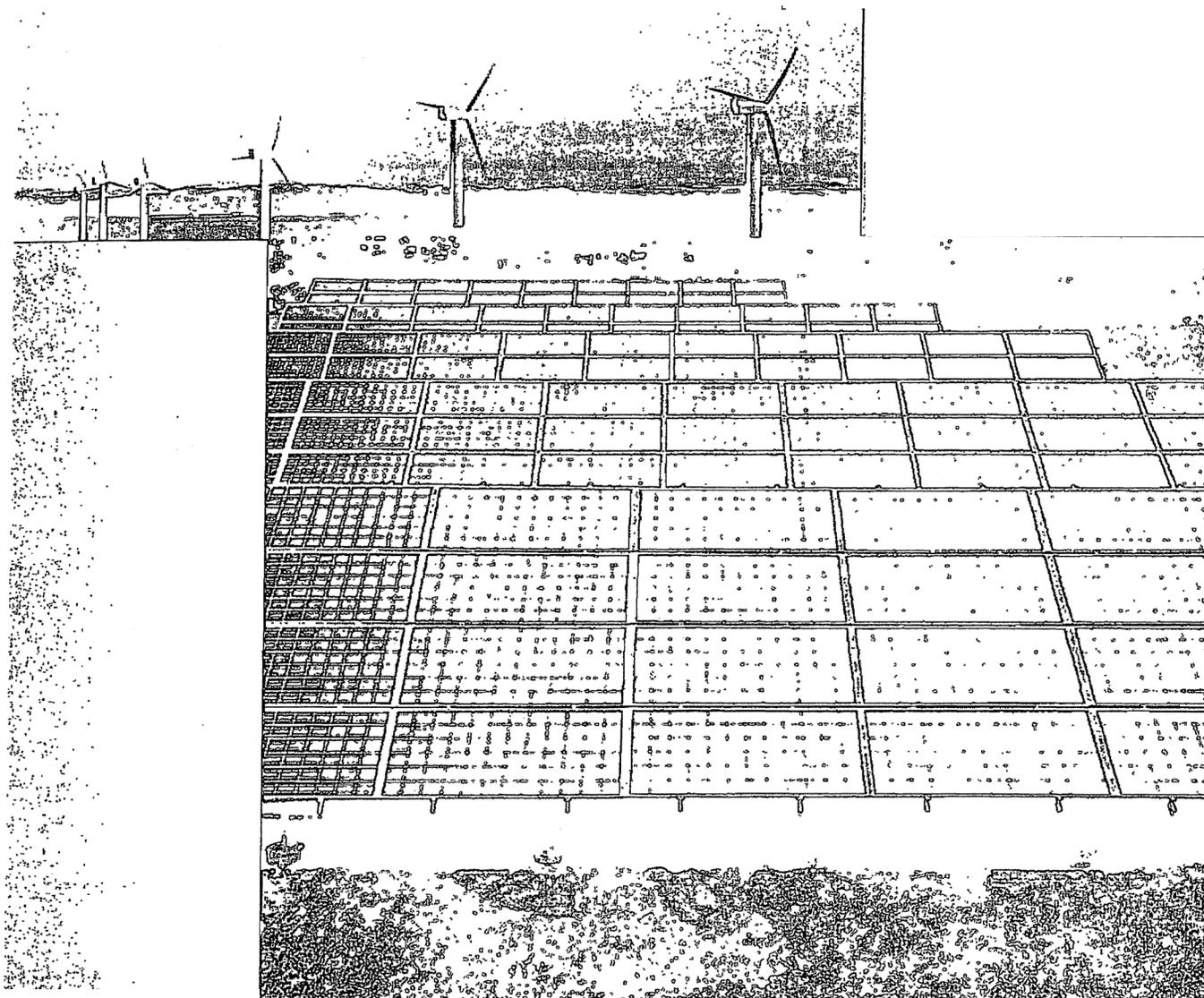
**Watt-hour Meter:** An electricity meter that measures and registers the integral, with respect to time, of the active power of the circuit in which it is connected. This power integral is the energy delivered to the circuit during the interval over which the integration extends, and the unit in which it is measured is usually the kilowatt-hour.

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Interconnection and Operating Requirements  
For Non-Utility Generation Up to 5,000 kVA

Pursuant to U-18-102(51)/U-19-020(46)/U-19-021(46)

Effective: December 23, 2020

2010 Edition

RCA NO.: 121      3<sup>rd</sup> Revision      Sheet No. 122



Canceling

2<sup>nd</sup> Revision      Sheet No. 122

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**MAR 12 2024**

STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**CALCULATION OF CHUGACH G&T LOSSES**  
**2023 Test Year**

Description	Q1-23	Q2-23	Q3-23	Q4-23	Total
<b><u>Energy Entering System</u></b>					
Beluga Power Plant	182.3	1,460.9	1,738.5	2,849.1	6,230.8
Fire Island Wind (IGT Bkr 532)	12,704.0	14,041.5	7,808.2	12,814.1	47,367.8
Southcentral Power Project	316,817.3	255,860.0	128,861.9	229,106.2	930,645.3
Plant 1	7,890.2	5,558.0	5,920.4	20,906.7	40,275.4
Plant 2	1,259.4	3,568.9	2,173.0	41,349.2	48,350.5
Plant 2A	230,513.6	155,609.5	239,112.0	228,651.0	853,886.0
Quartz Creek Substation	114,595.3	53,743.8	80,473.5	77,967.2	326,779.8
Teeland Substation	57,663.9	35,882.0	60,656.9	105,162.1	259,364.9
Plant 2 230 Yard	0.0	39,644.3	45,097.6	34,658.8	119,400.7
Eklutna Substation	5,902.1	0.0	2,135.2	0.0	8,037.3
International Substation	0.0	0.0	0.0	0.0	0.0
Cooper Lake Power Plant	11,959.3	10,098.8	16,998.3	8,803.9	47,860.4
Eklutna Hydro Electric Power Plant	31,555.9	43,819.7	65,968.5	58,378.5	199,722.5
<b>Total Energy Entering System</b>	<b>791,043.2</b>	<b>619,287.4</b>	<b>656,944.0</b>	<b>820,646.8</b>	<b>2,887,921.3</b>
<b><u>Energy Leaving System</u></b>					
Quartz Creek Substation					
Daves Creek Substation	14,959.6	14,676.2	15,431.8	13,680.4	58,748.0
Eklutna Substation	36,980.0	43,334.7	67,455.2	57,746.6	205,516.6
Teeland Substation	166,674.8	81,627.7	95,951.7	200,768.7	545,022.9
Plant 2 230 Yard	23,226.0	0.0	0.0	0.0	23,226.0
International Substation	104.9	100.9	105.0	107.2	418.0
Power Plant Station Service Totals	20,538.3	16,075.1	15,615.2	18,162.6	70,391.2
South - Distribution Substation Deliveries	288,524.1	248,666.3	246,784.5	292,597.2	1,076,572.2
North - Distribution Substation Deliveries	228,636.5	207,377.6	207,939.1	228,213.1	872,166.3
<b>Total Energy Leaving System</b>	<b>779,644.1</b>	<b>611,858.5</b>	<b>649,282.7</b>	<b>811,275.8</b>	<b>2,852,061.1</b>
Gross Energy Losses	11,399.0	7,428.9	7,661.3	9,371.0	35,860.2
Less Transformer Losses	1,591.4	1,591.4	1,591.4	1,591.4	6,365.5
<b>Net G&amp;T Losses</b>	<b>9,807.7</b>	<b>5,837.5</b>	<b>6,069.9</b>	<b>7,779.6</b>	<b>29,494.7</b>

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P.O. Box 196300 Anchorage, Alaska 99519-6300

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Canceling

2<sup>nd</sup> RevisionSheet No. 123**RECEIVED****MAR 12 2024**STATE OF ALASKA  
REGULATORY COMMISSION OF ALASKA

Chugach Electric Association, Inc.

**CALCULATION OF CHUGACH G&T LOSSES  
2023 Test Year <sup>1</sup>**

Description	Q1-23	Q2-23	Q3-23	Q4-23	Total	
<b>Chugach Retail Distribution Losses</b>						
Retail Receipts at Transmission Substation	517,160.6	456,043.9	454,723.7	520,810.3	1,948,738.4	
Less: Chugach House Power	2,696.9	1,470.9	1,278.2	1,501.9	6,947.9	
Net Receipts	514,463.7	454,573.0	453,445.5	519,308.4	1,941,790.6	
Retail Sales at Delivery	501,145.8	442,110.6	440,614.5	507,217.3	1,891,088.2	
Losses	13,317.9	12,462.4	12,831.0	12,091.1	50,702.4	
Add: 1/2 House Power	1,348.4	735.5	639.1	751.0	3,473.9	
Adj. Retail Dist. Losses	14,666.4	13,197.8	13,470.1	12,842.0	54,176.3	
At Delivery	2.927%	2.985%	3.057%	2.532%	2.865%	
At Transmission Substation	2.851%	2.903%	2.971%	2.473%	2.790%	
<b>Adjustment of G&amp;T Losses for House Power</b>						
G&T Deliveries	532,212.0	470,809.0	470,228.8	534,578.0	2,007,827.9	
Net G&T Losses	9,807.7	5,837.5	6,069.9	7,779.6	29,494.7	
Add: 1/2 House Power	1,348.4	735.5	639.1	751.0	3,473.9	
Adjusted G&T Losses	11,156.1	6,573.0	6,709.0	8,530.6	32,968.6	
At Delivery	2.096%	1.396%	1.427%	1.596%	1.642%	R
At Generation	2.053%	1.377%	1.407%	1.571%	1.615%	R

<sup>1</sup> G&T loss factor effective for the allocation of actual costs beginning January 1, 2024.

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