



# ***Utility Extension Manual***

*Public Utility District No. 1 of Pend Oreille County*

***Effective Date: August 1, 2023***



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# 1 Preamble

## 1.1 Purpose

The Utility Services Extension Manual (“Manual”) outlines the information, requirements and processes followed for the efficient and safe interconnection of Public Utility District No. 1 of Pend Oreille County (“PUD”) electrical, telecommunication and water services to ensure that all Customers of the PUD receive non-discriminatory and equitable consideration.

This manual fulfills the requirements of the PUD’s Utility Services Extension Policy approved by the Board of Commissioners.

## 1.2 Utility Services Extension Introduction

Pend Oreille County residents can request interconnection and service to the electric system, telecommunication system and any of the nine community water systems operated by the PUD. Additionally, large commercial Customers can request interconnection to the PUD’s Transmission or Generation facilities to support their manufacturing or wholesale operations. We have tried to organize our Utility Extension Process to be easy and flexible for our Customers.

This booklet intends to help the Applicant navigate their specific request for interconnection, modification, upgrade or abandonment of facilities. The information provides the basic requirements to request new, or modifications to existing utility services. The booklet addresses most of the information and requirements involving general extension requests, but it does not include all possible standards or specifications required by the PUD, state, federal or local codes.

### ***Please use the checklist below to assist you in the process:***

Applicant works with a PUD Customer Service Representative (CSR):

- Submit a completed Application
- Provide a copy of the property deed
- Provide a copy of the Pend Oreille County site evaluation
- Provide a site drawing
- Pay the engineering fee
- Schedule an onsite visit

After the onsite visit, the PUD will mail a Quote to the Applicant.

If the Applicant would like to proceed with the Utility Service Extension:

- Pay the Quote within 60 days
- Provide any necessary Easements
- Clear Right-of-Way if applicable
- Electric Service: Complete service application and pay deposit if applicable
- Electric Service: Install meter base. A state electric permit must be obtained prior to performing this work
- Electric Service: Have meter base inspected by L&I and contact the PUD with the approved permit number
- Fiber Service: Install a GFCI outlet within 10 feet from designed NID location

**The above steps must be completed within one year of making payment.** Once the above steps have been completed, the job is released to the operations department to schedule construction of PUD facilities.





## ***2- General Utility Extension Provisions and Definitions***





## 2 General Utility Services Extension Provisions

### 2.1 Definitions

Capitalized terms used in this Manual and in any Application for electric, telecommunications and/or water Service Facilities shall mean:

- **Applicant** –the party submitting an Application to the PUD for a utility line extension or modification for Utility Services.
- **Application** - PUD application completed and submitted by the Applicant requesting a connect to, an expansion of, or an increase or change to an existing service with the PUD’s Utility Systems; or the request for the PUD to construct a line extension in accordance with this manual.
- **Customer** - A person or entity owning or occupying a location within Pend Oreille County and receiving a utility service from the PUD.
- **Easement** – A legal document assigning the PUD the use of a Right-of-Way for the purpose of placing and maintaining utility equipment to serve a Customer.
- **L&I** – The Washington State Department of Labor and Industries.
- **Quote** - The costs of the requested extension or modification, including labor, materials, tools, transportation, services, administration, engineering, inspections, permitting, Easements and other related costs, which the Applicant is required to pay.
- **Right-of-Way** - The corridor necessary for PUD to use for the purpose of placing and maintaining utility Service Facilities. Rights-of-Ways are to be maintained kept clear of hazards, and to maintain access to equipment and facilities.
- **Service Area** - The land area to which the PUD is authorized to provide service.
- **Service Facilities** - All electrical, telecommunications and/or water facilities owned and operated by the PUD, including, but not limited to lines, conduits, ducts, poles, wires, cables, fiber optic cable, premises gateway devices, crossarms, receivers, transmitters, instruments, machines, appliances, instrumentalities and all devices, real estate, Easements, apparatus, property, and routes used, operated, owned, or controlled by the PUD to facilitate the provision of electric, telecommunication and water services.
- **Telecommunications** – PUD wholesale fiber and wireless facilities supported by the Customer Network Systems (CNS).
- **Utility Extension** – The extension, relocation or upgrade of Service Facilities to the Applicant’s desired service location to appropriately provide electrical, telecommunication and/or water service.

### 2.2 Application

Each Applicant must submit an Application for a Utility Extension, provide a deed to the property, and remit a non-refundable engineering fee. **The PUD will not process incomplete Applications.** The PUD may refuse to accept any Application, or give final acceptance of a Utility Extension, for reasons including, but not limited to, those set out in this manual.

Each Application is required to include a copy of the County site evaluation and a detailed site plan, illustrating the properties to be served and the approximate location of the proposed work (location of buildings, well, driveways, meter base, suggested transformer location, etc.) The PUD will review the proposal and the layout of the location of all service infrastructures needed to serve the area.

Applicants, in some instances, may be required to supply data relating to the expected use of the Utility Extension. This may include, but is not limited to expected usage, the mean and peak demand, or other specifics related to the requested utility.

### **2.3 Pre-Design & Engineering Fees**

An engineering fee is due upon submittal of the Application and charged in accordance with the PUD's approved Utility Extension Fees Policy.

The Applicant, or authorized representative, is required to make an appointment by calling (509)-447-3137 to schedule a date and time to meet with the appropriate PUD staff to determine the optimum Utility Extension location.

Applicants who fail to provide the necessary information needed to provide a Quote within 90 days of the onsite appointment will be required to submit a new or revised Application and pay additional fees to include, but not limited to another engineering fee.

Applicants who seek to materially modify a submitted Application, project design or requested service after the design work has started or the Quote is complete will be required to submit a new or revised Application and pay additional fees to include, but not limited to another engineering fee.

### **2.4 Ownership and Right-of-Way**

The PUD generally constructs, owns, operates and maintains its Service Facilities along public streets, roads, highways and public lands which it has the legal right to occupy by Easement. When a Utility Extension involves a public property, the PUD will secure the permits and Easements as needed. All costs (as determined by the PUD) associated with the PUD's obtaining Easements or permits will be paid by the Applicant.

When the Utility Extension is to be constructed on private property the Applicant is responsible for obtaining all necessary Easements along the proposed Right-of-Way. The PUD is under no obligation to commence any legal action to secure Easements. The PUD will provide an Easement document that the Applicant can use to secure an Easement for the required Right-of-Way. Each individual whose name appears on the Deed (e.g. husband and wife, etc.) will be required to sign and submit the notarized Easement form. All Easements and permits shall name the PUD as grantee or permittee and shall include all electric, telecommunication, and water Service Facilities. All completed and signed Easements are required in original copy.

The PUD will be the sole owner of all the electric, telecommunications and water Service Facilities installed along the established Right-of-Way. At all times the Utility Extension(s) shall remain under the sole control and jurisdiction of the PUD.

In the event the Applicant is unable to secure required Easements, and/or the PUD is unable to obtain required permits, the line extension or upgrade design work will cease and the Quote already paid by the Applicant, less PUD time or materials already spent on the project, will be returned to the Applicant. Construction will not begin until all permitting and Easements are secured.

### **2.5 Environmental and Cultural Review**

The Customer is responsible for all costs related to the PUD conducting environmental and cultural reviews<sup>1</sup> of any proposed Utility Extension construction. The PUD's areas of service have a number of environmental and archeological sensitive sites requiring each Utility Extension to be reviewed for impact.

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<sup>1</sup> RCW 27.53.060 Disturbing archaeological resource or site—Permit required—Conditions—Exceptions—Penalty.

If the results of the review show impacts that fail to satisfy federal, state, local or PUD requirements, the PUD will work with the Applicant to revise aspects of a plan so it meets environmental or cultural criteria.

## **2.6 Project Quote**

The PUD will prepare and submit a Quote, a Line Extension Agreement, and Easement form (if applicable), service applications, and other documentation to the Applicant using first class mail and/or electronic mail. All forms and required documentation must be completed, notarized where applicable, and returned with payment for the full amount.

Payment of the Quote is due within 60 days of the date on the Quote, unless otherwise specified. If after payment, the Customer is not ready to complete construction within one year, the Customer's payment for construction will be refunded, less all labor, transportation, material costs, or other costs incurred by the PUD.

## **2.7 Construction and Inspection**

Construction will begin only when all agreements are completed, all required Easements obtained, all Fees and Charges and Quotes are paid, L&I inspection is received (if applicable), and Right-of-Ways are cleared and ready for construction.

## **2.8 Trenching**

Trenching by the customer must be authorized by the PUD in writing. If the Applicant is responsible for trenching, after receiving required advance notice from the Applicant or its contractor, the PUD may provide an on-site inspector during trenching and before the trenching is backfilled. The inspection will assess if the trenches are straight, dug to the appropriate depth and constructed as designed.

The Applicant is solely responsible for backfilling, compacting and maintenance of the trenched area.

Beginning in October of each year the PUD reserves the right to halt trenching until the lifting of road restrictions following the spring thaw. Applicants seeking an underground service during this time frame may be given the option to provide their own trenching per the guidelines above or elect to wait until the PUD can resume trenching.

## **2.9 Right-of-Way Clearing**

Clearing refers to the removal of trees and objects to provide the necessary corridor for Service Facilities. Line extension fees and Quotes do not include these costs. Clearing is to be performed by the Applicant to PUD standards.

Overhead lines necessitate a cleared corridor of 30 feet. Underground conductors require a cleared corridor of 15 feet with stumps removed in a straight direction. The Applicant will be responsible for the completion of the Right-of-Way clearing. The PUD may provide an on-site inspection of the clearing prior to the PUD commencing construction.

## **2.10 Latecomer Fee**

The PUD will not rebate Utility Extension costs. Prospective Applicants are encouraged to include all other potential Applicants in sharing the cost of the Utility Extension at the time of application.





## ***3 –Electric Service Extension***



### 3 Standard Electric Service Facilities Extension

#### 3.1 Electric Service Facilities Extension General Provisions

The PUD will provide, the following standard class of service voltages, although not all of them are, or can be, made available at each service delivery point.

Class	Voltage	Type
Residential	120/240	Single Phase or Three Phase
Residential	120/208	Three Phase
Commercial	120/240	Single Phase or Three Phase
Commercial	120/208	Three Phase
Commercial	277/480	Three Phase
Irrigation	Negotiable	Three Phase
Industrial	Negotiable	Three Phase

Primary distribution interconnections require adequate capacity for the load contemplated. The PUD has final determination and sole discretion in calculating the most viable electrical line extension and route, which is not necessarily the shortest distance. The electrical line extension and route will be based on operability, maintainability, geography, property boundaries, overall public safety, feasibility, construction category, permanence, equipment requirements, clearing standards, consumer classification, and costs.

#### 3.2 Meter Base

The Applicant will provide and install the meter base for 200 or 400 amp single or three phase services. For services larger than 400 amp, the Engineering Department shall be contacted for details and approvals of a meter base.

Meter bases will be located in compliance with the PUD's service requirements, as agreed to in the engineering design and Quote and in accordance with state and local electrical codes.

- The location and installation of a meter base must allow easy access by PUD personnel at all times.
- Required meter base height: 5 to 6 feet above finished grade, deck porch, etc. to center of meter.
- The meter base cannot be enclosed in a structure, such as a porch, entryway or shed.
- A clear path to the meter must be maintained, and a 3-foot clearance around the meter to allow PUD access for reading and maintenance. Shrubbery and landscaping must be kept clear of the meter location.
- All electric meter installations shall conform to L&I guidelines. Service will not be energized until permit approval from L&I is received.

The Point of Delivery is that point on the customer's premises (or other agreed point) where the electric facilities of the PUD and Customer are connected. Unless otherwise agreed between the PUD and customer, the Point of Delivery shall be at the PUD's entrance to the meter base. All wiring and

equipment beyond this point of delivery shall be installed and maintained by the Customer. It shall be the responsibility of the Customer or their electrical contractor to advise the PUD of their service requirements in advance of installing the service equipment and to make sure that the location is acceptable to the PUD.

### **3.3 Pole Mounted Meter Bases**

If a pole mounted meter base is approved by the PUD, as part of the Quote, the PUD will place the pole for the meter base, however once the pole is in place, the Applicant/Customer will own the pole. The PUD will maintain the overhead drop to the meter pole. The PUD will not be responsible for any maintenance or replacement of the meter pole after initial pole set is completed— this applies to new and existing meter poles installed prior to the date of this policy.

### **3.4 Pad Mount Transformers**

Pad mount transformers (when specified) must be located so that they have clearances sufficient for right-of-way spacing for firefighting, door access and maintenance.

Pad Mounted Transformer Clearance Requirements:

All sides          10 feet

Transformers above 3,000 kVA or 1,000 gallons of FR3 class liquid, must be approved by PUD Engineering.

The PUD's assets are prohibited from being painted by any other than those employed or contracted by the PUD.

### **3.5 Customer Utilization Equipment**

Any Customer equipment which utilizes electric energy for mechanical, heating, lighting, or similar useful purposes should be properly selected and used. Specifically, all appliances, devices, or equipment connected to the Customer's installation, and therefore PUD facilities, shall be properly constructed, controlled, or protected so that the PUD's electric and communication service to other Customers and entities will not be adversely affected. The Customer shall be liable for the cost to repair and/or replace damaged service equipment due to Customer's equipment and/or loads exceeding the capacity limitations of Customer's service.

The PUD does not offer surge protection for the Customer's service, nor is it required. Customers are encouraged to install this type of protection to protect their home or business from transients on the electric system caused by normal operation and switching on the electric system. Customers who desire surge protection are encouraged to contact a licensed electrician to install this type of protection.

### **3.6 Backup Generators**

All backup generator installations should have a transfer switch installed in accordance with the requirements of the National Electric Code. Transfer switch installations must be inspected by L&I and we request that customers provide the PUD with a copy of the permit for the transfer switch installation.

### **3.7 Construction Service (In and Out) Extension**

Construction Service is a temporary installation specifically intended to provide temporary electrical service to facilitate the construction of a permanent service. The temporary service must be located no farther than 10 feet from the transformer location. The PUD shall energize an L&I approved single-phase service rated at 200 amps or less that is specifically for the purpose of construction of a permanent account when all fees for the permanent service have been paid. If the temporary service is energized for



more than a year, it will be determined by the PUD to be a permanent service, no refund will be provided, and any additional extension will require the Customer to restart the process for a Utility Extension.

### **3.8 Area Lighting Service Extension**

The PUD will install, own, maintain and operate area lighting on PUD owned poles at locations agreed on with the Customer. The PUD will supply the energy for lighting fixtures. Installation costs are subject to the applicable fees in accordance to the PUD's Utility Services Fees and Charges Policy(ies). The Customer is responsible for all trenching from the underground power sources to light location. PUD personnel will engineer area light placement to best suit Customer and PUD's needs. Equipment installation is at the PUD's sole discretion.

### **3.9 Industrial Service Extension**

Industrial service refers to services with estimated maximum demands of 500 kWa or more requiring service equipment capacity of 500 kVA or greater at a single point of delivery. Industrial service line extensions will be by negotiated contract only. Depending on the project complexity, size and engineering required, the PUD may specify the Applicant pay the actual cost of construction, which may require a true-up between the Quoted and actual costs before energization.

Industrial service extension requests may require the Applicant to provide additional information for engineering, including, but not limited to:

- Load ramping schedule
- Hours of operation
- Load diversity
- Power factor
- One-line diagram of electric Service Facilities
- Projected peak load by month
- Other load information as requested and deemed necessary by the PUD

As part of the approval process, the PUD will conduct distribution studies based on the requested location of the proposed Utility Extension. The studies will evaluate the PUD's ability to provide the services with existing infrastructure, or if infrastructure upgrades are needed. Where infrastructure improvements are identified, those improvements will be part of the Quote provided to the Applicant.

The final agreements will include established points of demarcation between the PUD and the proposed facility to clearly define facility ownership. Metering requirements, required system equipment and protection systems will be specified where needed to protect the PUD's electric system.





## ***4 – Telecommunications Service Extension***



## **4 Telecommunications Service Extension**

### **4.1 General Purpose and Provisions**

The PUD provides Telecommunications service through the Community Network System (CNS). The PUD is a wholesale provider of these services, selling broadband services and products only to authorized Retail Service Providers (RSPs). RSPs, in turn, resell services to their retail customers. The PUD's Utility Services Extension Manual is incorporated into those agreements by reference. While each RSP is responsible for their own policies and procedures for serving their retail customers, PUD policies and processes shall specify necessary terms and conditions to enable the provisioning of services to the RSP's retail customers.

CNS provides open access wholesale nondiscriminatory service utilizing fiber optic and wireless infrastructure. The PUD can also provide dark fiber lease, and communication space rental if available.

### **4.2 Fiber Telecommunications Service**

A Line Extension Connection is defined as a request by an Applicant to connect to existing PUD telecommunications facilities required to be served by a qualifying RSP.

If the PUD determines there is fiber distribution available the Applicant will apply for a fiber Utility Extension with the PUD. The PUD will evaluate the application to bring the connection to the home or business. If approved, the PUD will provide the Applicant with a Quote, and the Applicant will be responsible for all associated costs of the extension.

### **4.3 Standard Wireless Service**

Standard Wireless Service is product available to RSPs for resale to their residential and business customers.

New service Applications can only be made by the RSP. If approved, the PUD will provide the RSP with a wireless installation kit which includes, but is not limited to:

- Provisioned Wireless Customer Premise Equipment (CPE)
- Wireless CPE Mounting Hardware
- Copper Cable Surge Protectors

RSPs are responsible for the full cost of the initial installation of the kit, and the RSP owns the equipment once received. Unless the equipment is covered by the manufacturer's warranty, RSPs will be responsible for purchasing replacement equipment or kits.

### **4.4 Fiber Interconnection Construction Requirements**

For fiber Telecommunication interconnection, Applicants shall follow the general Utility Extension request process. The PUD, at its sole discretion, will determine the most suitable type of installation of overhead or underground construction.

Customer Premise Equipment (CPE) or the Network Interface Device (NID), refers to communications equipment that resides at the terminus of a line on the Customer's premises, whether it is a home or business, and provides an interface between the Customer's local network and the broadband provider's network. The PUD requires that this equipment be located on the outside of any Customer premise for standard class service. The PUD will own and maintain all Telecommunication facilities located between its backbone infrastructure and the CPE/NID.

The PUD requires the Applicant to have, or to install, a grounded outdoor outlet with a cover, located within 10 feet of the designed CPE/NID location. The outlet should be protected by a 15 or 20 amp

breaker, and a dedicated circuit is preferred. The breaker must have Ground Fault Circuit Interruption (GFCI) protection. This power source will be used to power the PUD's CPE/NID.

(Example of GFCI outdoor rated outlet with cover)



(Example of CPE installation)





## ***5 – Facility Modification***





## 5 Facility Modification

### 5.1 Facility Modification Request General Provisions

A Facility Modification Request applies to requests from public agencies and property owners to make modifications and relocations to existing electric, water and telecommunications services, and infrastructure. This may include the under-grounding of electric or Telecommunication services from an existing overhead supply, or can include altering the depth, height, route or physical location of any overhead or underground Service Facilities.

All facilities that are installed or changed are required to be brought into compliance with the current National Electrical Safety Code (NESC) standards, other applicable standards, PUD design and construction standards. The PUD has sole discretion, to determine the suitability of the request to modify the service or facility. The PUD will determine if the relocations or modifications of the facilities, or the conversion from overhead to underground of Service Facilities, is in the PUD's best interests. The PUD will not modify or relocate facilities when it is deemed that such work would be a detriment to the safe and reliable operation of the facilities.

This process is subject to the franchising authority of municipalities for public rights-of-way in which the PUD operates. Individual franchises and/or other agreements will be reviewed in conjunction with the process.

### 5.2 Professional Services

The Applicant will be required to retain and pay for professional services where the PUD determines the project design requires additional or specialized services such as advanced civil engineering, electrical engineering, surveying, geotechnical, environmental, cultural or other professional services.

### 5.3 Upgrades, Modifications and Relocations

The PUD, for a fee as provided in the Quote, will alter secondary services to accommodate Customer service upgrade requirements, modifications or relocations. Upgrades, modifications and relocations shall follow the PUD's Electric Service, Water Service or Telecommunications Service Extension process except as noted below:

- The Quote for the requested service modifications and relocations includes all work to remove, or abandon old service equipment.
- The PUD will not be responsible for disturbance or damage to property, landscape or hardscape along the right-of-way for the construction work. **The Applicant will be responsible to restore or repair the disturbed area after construction.** The PUD will endeavor to minimize the disturbance to the construction area. The PUD will not have any responsibility for settling, maintenance, etcetera of disturbed ground work.
- The PUD will require the Applicant to provide trenching (refer to trenching section).

### 5.4 Underground Conversion of Electric and Telecommunications Service

Upon receipt of a request to consider undergrounding Electric and/or Telecommunications Service Facilities, PUD staff will analyze if underground service is feasible. If the PUD determines undergrounding to be feasible, and in the PUD's best interest, the PUD will provide a Quote for placing existing overhead Electric and/or Telecommunications Service Facilities underground.





## ***6 – Subdivisions, Developments, Industrial Parks, and Exempt Segregations***



## **6 Subdivisions, Developments, Industrial Parks, and Exempt Segregations**

### **6.1 General**

Developers of either small and large lots or parcels platted as subdivisions, developments, or industrial parks, and/or exempt segregations (projects), who desire to provide the underground primary cable system with associated substructures, or an overhead primary conductor installation are required to work directly with an assigned engineer for planning and construction.

### **6.2 Service Backbone**

The electric design will require a backbone system designed to provide every lot or parcel the option to connect to the PUD's primary electrical system. The electric backbone system may be overhead or underground, and can be either single-phase or three-phase, as solely determined by the PUD for cable or conductor economical loading and phase balancing purposes. Consideration must be made for the nature and size of the initial phase(s) of the project, as well as the ultimate built-out load for all phases of the project. For underground backbone systems, the PUD will require the applicant to include communication conduit and associated equipment, as solely determined by the PUD. Where other Utilities Services are available or requested, the PUD will coordinate internally with the Community Network System and/or the water system.

### **6.3 Design and Construction**

A looped feed single-phase or three-phase primary distribution system will be used when practicable. This will provide increased electric service reliability to the Customers over the life of the project area. The PUD will determine the number, size, and layout of primary phase cables or conductors, and associated substructures and pole configuration. The PUD will determine the trench configuration or cable route for underground systems, and necessary conduit and cable requirements for the primary and secondary, and service conductors. The developer is responsible for any required distribution conduits and associated trench space needed to serve both the initial and ultimate built-out phases of the project. The PUD will install its electrical facilities after final site and road sub-grade has been obtained, but before any road improvements have been started. This will facilitate the efficient and cost-effective design and installation of PUD underground conduits, substructures, and other appropriate cable and equipment facilities.

### **6.4 Coordination with Telecommunications Facilities**

The PUD will coordinate projects that include telecommunications and electric service for efficiency in construction type, location, and reliability.

The PUD will install all Telecommunication Facilities including but not limited to cabinets, conduit, vaults, electronics, handholes, nodes, distribution towers, connectors, splices, fiber optic cable and other Telecommunication apparatus as needed. These items will be included in the Quote to be paid by the Applicant.

### **6.5 Costs and Billing**

The developer is responsible for the complete cost of the backbone system as designed by the PUD in accordance with the PUD's standard labor and material rates. The PUD will provide a Quote to the developer for planning purposes. The developer must pay the Quoted cost prior to the commencement of construction. Depending on the project complexity, size and engineering required, the PUD may specify the Applicant pay the actual cost of construction, may be billed in installments during project progress, and/or may require a true-up prior to the backbone system's being energized and made available for electrical connections by lot owners.





## ***7 – Water Service Extension***





## 7 Water Service Extension

### 7.1 General Provisions

The PUD provides facilities for the distribution of water within its systems in accordance with local community water agreements, approved land use documents, applicable water comprehensive plans, and Washington State Department of Health (DOH) approval and policies. The District operates nine community water systems within Pend Oreille County:

- Metaline Falls
- Lazy Acres
- Sunvale
- Holiday Shores
- Riverbend
- Riverview
- Sandy Shores
- Greenridge
- Granite Shores



Requests for interconnection must be within the defined Service Area boundaries of one of the District's community water systems.

All Water Facility Extension applications are subject to engineering and financial feasibility analysis by the PUD. The PUD will evaluate the requests for extensions consistent with PUD business practices to determine if the services can be provided technically, efficiently and economically. Where the Applicant's property is not adjacent to the PUD 's water system, or if the line to the Applicant's property is not adequately sized to provide the required service, as determined by the PUD, the Applicant shall be financially responsible to upgrade facilities remote from the Applicant's property and/or extend the line to its point(s) of service.

Water Facility Extensions are subject to applicable laws, ordinances, franchises, construction standards, design standards, and other reasonable conditions, determined by the PUD in its sole discretion. This includes the mitigation of any physical and geological risks. The PUD may require an Applicant to conduct a professional study that the PUD determines is appropriate for the given conditions. The PUD may refuse to accept an application or give final acceptance to a Water Facility Extension for reasons the PUD determines to be appropriate. This may include, but is not limited to, risk of harm to PUD Water Facilities or Utility Service, safety, access and/or operation and maintenance limitations, geotechnical risks that the Applicant cannot mitigate to the PUD's satisfaction, and/or unwillingness or inability of the Applicant to comply with the PUD's conditions.

### 7.2 Definitions

- **Water Facilities** - The pipelines, pump stations, reservoirs, structures, control Equipment, pressure reducing stations, related appurtenances and all other related and necessary facilities for the proper function of the PUD's Water Systems.
- **Main** - Water pipes owned by, or to be owned by, the PUD used for the purpose of conveying water to the Customer's service connection.

### **7.3 Extension Costs**

Applicants who desire water service from an existing water system must pay the full cost for attaining such service. Costs include the review, permitting, Easements, materials and labor, and the costs of any additional upgrades to the system that may be needed to make the extension.

### **7.4 Resale of Water**

Water is not to be re-sold by the Customer, except by special agreement or written permission from the PUD. In no case, unless approved in writing by the PUD, may the rates charged for resale of water exceed the rates charged by the PUD for similar service.

Those wishing to fill water vessels or trucks with water must complete an Application to withdraw water, which will be reviewed by the PUD.

### **7.5 Design**

#### **General**

The PUD will engage a professional engineer, experienced in water system design, to design the Water Facility Extension. The design phase of the line extension process includes, but is not limited to, preparation of plans and specifications, Right-of-Way identification, permitting and review. The PUD will review, approve the plans and specifications, and if applicable, seek review and approval by the Washington State Department of Health and/or Ecology.

#### **Metering**

Appropriately sized meters are required for all new connections, both existing and for new Customers. The PUD will select and install all service metering as part of the project.

#### **Low Pressure**

If the PUD determines that a property supplied by the extension is at an elevation that cannot be furnished with adequate pressure at all times, the applicant will be obligated to execute a low-pressure agreement prior to final acceptance of the application by the PUD.

#### **Pressure Reducing Valves**

Customers are encouraged to install pressure-reducing valves in accordance with the latest edition of the Uniform Plumbing Code when water main pressure exceeds 80 pounds per square inch (PSI). The pressure-reducing valves, when required, must be installed and maintained by the Customer, on the Customer's services line outside the vault and at the Customer's sole expense. The PUD shall not be liable for any loss of claim resulting from the failure of the PUD's or Customer's pressure-reducing valve to protect the Customer's plumbing and associated equipment.

#### **Cross Connection Controls and Back Flow Prevention**

- **Customer's Responsibility to Prevent Backflow**

The installation or maintenance of any cross connection with the PUD's water supply is prohibited. Any cross connection found must be terminated by the Customer at their own expense.

The PUD may discontinue Water Service in the event a cross connection is identified and not removed after notification from the PUD. The PUD may also deny or discontinue Water Service to any Applicant or Customer failing to cooperate in the installation, maintenance, testing, or inspection of backflow prevention assemblies required.

- **Backflow Prevention Specifications**

As a condition of new or continued Water Service, approved backflow prevention assemblies shall be installed and maintained by all Customers who:

- Are industrial or commercial Customers not entitled to an exemption;
- Operate commercial or residential fire sprinkler systems connected to their plumbing;
- Operate irrigation systems connected to their plumbing and the PUD's system;
- Maintain cross connections of their Water System with air conditioning systems, medical or dental equipment, beverage machines, or other devices or processes where chemicals or other substances with the potential to threaten public health have the potential to be introduced into the Water System;
- Have plumbing arrangements that make it impractical for the PUD to verify potential cross connections; and
- Are judged by the PUD to be in a situation where it is necessary to protect the PUD's Water System or to protect the public's health and safety.

Any backflow prevention assembly installed shall be approved by the Washington State Department of Health and the PUD. Unless an exemption is granted by the PUD, the minimum backflow prevention assembly installed shall be a double check valve assembly. A reduced pressure backflow assembly is required whenever toxic materials are present, whenever the PUD finds the cross connection poses a health hazard or whenever the PUD finds intricate plumbing arrangements which make it impractical to determine whether cross connections exist. The double check valve assembly and reduced pressure backflow assembly shall be installed at the service connection downstream from the water meter and prior to any branch connections or taps from the Customer's service piping.

Vacuum breakers may be substituted for other backflow prevention assemblies required under this regulation where the PUD determines that the circumstances allow such substitution without compromising water quality and public health. Where the Applicant or Customer can demonstrate, to the satisfaction of the PUD, that there are no cross connections, and that no health hazard exists, the PUD may grant the Customer an exemption. Exemptions are at the sole discretion of the PUD, and subject to periodic review. Exemptions may be revoked whenever a cross connection is made, or a risk to public health or water quality is identified.

- **Backflow Device Maintenance and Inspection**

The PUD has the right to inspect, approve, and deny backflow prevention assemblies, to require corrections, modifications, repairs, or maintenance on backflow prevention assemblies and to inspect the Customers premises where backflow prevention assemblies may be required. The PUD shall not be liable for any loss or claim resulting from cross connection.

As a condition for continued Water Service, Customers shall make their Premises, including buildings and structures, to which water is supplied accessible to PUD personnel. PUD personnel will determine whether backflow prevention assemblies are required or if they are properly installed and maintained. Failure of a Customer to allow access shall result in the installation of a proper backflow assembly at a location readily accessible to PUD personnel.

- **Interconnection to Private Water Supplies**

The PUD prohibits interconnection of private water supplies with the PUD's water distribution system. Auxiliary water sources (private wells, piped irrigation sources, etc.) are a cross connection and must be effectively isolated from the PUD's Water System using an approved backflow prevention assembly. The Customer shall allow the PUD to visually inspect piping on Premises retaining auxiliary water sources.

- **Backflow Assembly Testing**

All backflow prevention assemblies are subject to annual inspection and testing. The cost of installation, annual performance testing, and any required maintenance of the backflow prevention assemblies is the responsibility of the Customer. The PUD will provide advance notice to the Customers including testing and inspection due dates, as well as a list of Certified Backflow Prevention Assembly Testers.

It is the Customer's responsibility to only use qualified backflow assembly testers certified in the State of Washington and approved by the PUD. The PUD's approval or lack of approval of the Customer's Tester shall not place any responsibility or liability on the PUD for the condition or maintenance of the Customer's backflow assembly or plumbing.

The following standards shall apply to all testing, repair, and certification of backflow prevention assemblies within the PUD's Service Area.

- No person other than an employee of the PUD is authorized to operate the street-side meter shutoff valve (angle meter, curb stop or gate valve).
- Backflow prevention assembly installations shall be in conformance with current PUD standard practices.
- All newly installed backflow assemblies shall be pressure regulated if the inlet pressure exceeds the manufacturer's rated working pressure.
- When testing an existing backflow assembly, the proper installation/application for that type of assembly shall be verified and reported only on PUD backflow assembly test report forms.
- When testing a new backflow assembly, testers may use the PUD 's blank test report forms or PUD approved backflow assembly test report forms. The forms must contain all information pertaining to the test and must be legible.
- The original copy of all completed backflow assembly test reports must be submitted to the PUD within thirty (30) days of the initial test, but in no case received by the PUD after the listed due date. If repairs are needed that require more time than allowed by the test notice deadline date, the tester, or Customer shall contact the PUD for an extension to the original deadline.
- The tester must report any tampering, improper installations or plumbing that could result in backflow to the PUD.

## **7.6 Final Connection to PUD Systems**

Only after final inspection, pressure testing and the PUD's receipt of satisfactory bacteriological testing results can the final connections to the PUD's existing water system be made.





## ***8 – Facility Abandonment***





## **8 Facility Abandonment**

### **8.1 Facility Abandonment General Provisions**

Facility abandonment refers to PUD facilities and equipment that are no longer used to provide services to the end Customer. The reasons for abandonment may vary; however, unused facilities still require maintenance by the PUD for the safety of the public and the reliability of the equipment. In some cases, it is more cost effective for the PUD to remove facilities and reduce the liability and costs for the PUD ratepayers.

Customers may request the PUD abandon and remove infrastructure due to changing needs, changes to their property, or removal of buildings that the facilities serviced. Occasionally, service may be disconnected from a residence, building, equipment, or business for an extended period of time.

### **8.2 Restoring a Previously Abandoned Service**

A service is considered abandoned when it has been unused for longer than 18 consecutive months. PUD will inspect all equipment and facilities that have been abandoned prior to reenergization. Lines and poles will be inspected for damage, vegetation contact and suitability for reenergization. The Customer will be required to have their electric service panel inspected by L&I to ensure their service is safe to energize prior to the PUD reenergizing the service.

The PUD may determine that equipment may have to be repaired, replaced and/or upgraded to restore service. If so, the Customer will be responsible for all repair costs. The Customer will be given a Quote to restore service, and the Quote must be paid in full before construction work will commence. If the work is considered significant, the Customer may be advised to submit an Application for a new line extension request.

### **8.3 PUD Condemnation of an Abandoned Service**

The PUD has sole discretion to condemn and remove abandoned equipment and facilities when they have been abandoned for more than 5 years. Equipment may be removed and reused at other locations at the PUD from any abandoned facilities at any time. After 5 years, lines and poles may be removed, or underground lines may be abandoned in-place below grade level, to protect the public, or reduce the cost of maintenance of PUD infrastructure. The PUD has sole discretion to maintain title to the established Easements, and any permitting that may be part of the Rights-of-Way.

### **8.4 Requests to Abandon or Remove Infrastructure**

Customers can, at any time, request that their service, or infrastructure on their property be abandoned or removed. If requested, the Customer will be responsible for all costs and fees incurred to remove the infrastructure. The PUD has sole discretion in deciding if removing the infrastructure, or abandoning underground in place is in the best interest of the PUD and its ratepayers.

As part of a requested abandonment or removal of infrastructure, the PUD will salvage as much of the equipment as reasonable. All overhead lines, equipment and poles will be removed. Underground lines will be abandoned in place. The PUD will not excavate for the removal of underground services.

No work will begin until the Applicant/Customer pays the Quote for removal. All Easements will remain with the PUD, unless otherwise stipulated in a written agreement.





# ***9 – Distributed Generation/Alternative Power Generation Request***



## **9 Distributed Generation/Alternative Power Generation**

### **9.1 General Purpose and Provisions**

The Distributed Generation/Alternative Power Generation Request process establishes the terms and conditions governing the interconnection of electric generating facilities with a maximum generating capacity of less than or equal to 100 kilowatts to the electric system over which the PUD has jurisdiction.

Generating facilities with generating capacities greater than 100 kW are interconnected in accordance with the Energy Policy Act of 2005, Pub. L. No. 109-58 (2005) that amended section 111 (d) of the Public Utility Regulatory Policies Act (PURPA).

Distributed Generation/Alternative Power Generation Requests must conform to the requirements of chapter 80.60 RCW, Net Metering of Electricity, and to comply with provisions of the Energy Policy Act of 2005, Pub. L. No. 109-58 (2005) that amended section 111 (d) of the Public Utility Regulatory Policies Act (PURPA) relating to Net Metering (subsection 11) and Interconnection (subsection 15). Additionally, these interconnections may be under specific federal, state or local incentive programs, and may need to conform to those specific programs for incentives, rebates or credits.

Distributed Generation/Alternative Power Generation Requests do not apply to standby (emergency or back-up) generators designed and used to provide power when PUD service is interrupted, and operate in parallel with the PUD system for less than 0.5 seconds when switching between emergency and normal service.

This document governs the terms and conditions under which the Applicant's facility will interconnect with, and operate in parallel with, the PUD 's electric system. This does not govern the settlement, purchase, or delivery of any power generated by the Applicant's Generating Facility.

### **9.2 Application of Rules**

The request to connect Distributed Generation/Alternative Power Generation is technical and may cause damage to PUD equipment or jeopardize the safety of PUD Personnel. The specifications and requirements are intended to mitigate possible adverse impacts caused by the Generating Facility on PUD equipment and personnel and on other Customers of the PUD. They are not intended to address protection of the Generating Facility itself, Generating Facility personnel, or its internal load. It is the responsibility of the Generator to comply with the requirements of all appropriate standards, codes, statutes and authorities to protect its own facilities, personnel, and loads. These rules modify, if necessary, any existing interconnection rules of the PUD, including but not limited to, rules implementing chapter 80.60 RCW, Net Metering of Electricity.

### **9.3 Definitions**

- **Generating Facility** - Means a source of electricity owned by the Applicant or Generator that is located on the Applicant's side of the point of common coupling, and all facilities ancillary and appurtenant thereto, including interconnection facilities, which the Applicant requests to interconnect to the PUD 's electric system.
- **Generator** - Means the entity that owns and/or operates the Generating Facility interconnected to the PUD's electric system.
- **Initial Operation** - Means the first time the Generating Facility is in parallel operation with the electric system.
- **Net Metering** - Means measuring the difference between the electric energy supplied by a PUD and the electric energy generated by a Generating Facility over the applicable billing period.

- **Parallel Operation or Operate in Parallel** - Means the synchronous operation of a Generating Facility while interconnected with a PUD 's electric system.
- **Point of Common Coupling or PCC** - Means the point where the Generating Facility's local electric power system connects to the PUD 's electric system, such as the electric power revenue meter or at the location of the equipment designated to interrupt, separate or disconnect the connection between the Generating Facility and PUD. The point of common coupling is the point of measurement for the application of IEEE 1547, clause 4.
- **Production Metering** - Means measuring the total electric energy produced by an electric Generating Facility over the applicable billing period.

#### 9.4 Technical Standings for Interconnection

General interconnection requirements:

- Any Generating Facility desiring to interconnect with the PUD 's electric system or modify an existing interconnection must meet all current minimum technical specifications applicable.
- The Generation Facility must comply with all requirements from Table 1 that are applicable to the interconnection of that Generating Facility.

**Table 1 - Interconnection Requirements**

Feature	Single-Phase		Three-Phase	
	≤ 25 kW Inverter based	≤ 25 kW Non-Inverter based	≤ 100 kW Inverter Based	≤ 100 kW Non-Inverter Based
IEEE 1547 compliant	√	√	√	√
UL 1741 listed	√		√	
Interrupting devices (capable of interrupting maximum available fault current)	√ [8]	√	√ [8]	√
Interconnection disconnect device (manual, lockable, visible, accessible)	√	√	√	√
System Protection	√ [9][5]	√ [3][4][6]	√ [9][5]	√ [3][4][5][6]
Over-voltage trip	√ [8]	√	√ [8]	√
Under-voltage trip	√ [8]	√	√ [8]	√
Over/Under frequency trip	√ [8]	√	√ [8]	√
Automatic synchronizing check		√		√
Ground over-voltage or over-current trip for PUD		√ [2]		√ [2]
Power factor		√ [7]		√ [7]

√ – Required feature (blank = not required)

\* Capacity of single or aggregate generation

[1] – PUD may choose to waive this requirement.

[2] – May be required by the PUD; selection based on grounding system.

[3] – No single point of failure shall lead to loss of protection.

[4] – All protective devices shall fully meet the requirements of ANSI C37.90.

[5] – PUD will specify the transformer connection.

[6] – It is the customers' responsibility to ensure that their system is effectively grounded as defined by IEEE Standard 142 at the point of common coupling.

[7] – Variance may be allowed based upon specific requirements per PUD review. Charges may be incurred for losses.

[8] – UL 1741 listed equipment provides required protection for inverter based generation.

[9] – Per UL Standard #1741 (“UL1741”) manufacturers must submit their equipment to a Nationally Recognized Testing Laboratory (“NRTL”), recognized by the United States Department of Labor, Occupational Safety & Health Administration (OSHA), that verifies compliance with UL1741. This Listing is then to be displayed clearly on the equipment and any supporting documentation.

- Any single or aggregated Generating Facility with a capacity greater than 25 kW shall require a three-phase interconnection to the PUD’s facilities.
- The specifications and requirements shall apply generally to the Generator-owned electric generation equipment (or any other facilities or equipment not owned by the PUD) to which these standards and agreement(s) apply throughout the period encompassing the Generator’s installation, testing and commissioning, operation, maintenance, decommissioning and removal of said equipment. The PUD may verify compliance at any time, with reasonable notice.
- The Generator shall comply with the requirements of this document and cited standards and requirements. However, at its sole discretion, the PUD may approve alternatives that satisfy the intent of, and/or may excuse compliance with, any specific elements of the requirements except local, state and federal building codes.
- **Code and standards** - Generator shall conform to all applicable codes and standards for safe and reliable operation. Among these are the National Electric Code (NEC), National Electric Safety Code (NESC), the Institute of Electrical and Electronics Engineers (IEEE), American National Standards Institute (ANSI), and Underwriter’s Laboratories (UL) standards, and local, state and federal building codes. The Generator shall be responsible to obtain all applicable permit(s) for the equipment installations on its property.
- **Safety** - All safety and operating procedures for joint use equipment shall be in compliance with the Occupational Safety and Health Administration (OSHA) Standard at 29 CFR 1910.269, the NEC, NFPA 70E, Washington Administrative Code (WAC) rules, the Washington Division of Occupational Safety and Health (DOSH) Standard, and equipment manufacturer’s safety and operating manuals.
- **Power quality** - Installations will be in compliance with all applicable standards including IEEE Standard 519-1992 Harmonic Limits. The PUD may determine, at its sole discretion, that the IEEE Standard 519-1992 Harmonic Limits is insufficient or inadequate and therefore establish a new compliance standard. Whenever a Generator’s equipment has characteristics which causes interference (e.g., harmonics, transients, waveform distortions, fluctuations, etc.) with the PUD’s service to other Customers, the Generator causing the interference shall make changes in such equipment or provide, at their own expense, additional equipment to eliminate the interference. Power quality of the Generator shall meet the NFPA 70, IEEE 519 standard, and ANSI C84.1 standard.

## **9.5 Specific interconnection requirements**

The Generator shall furnish and install on their side of the meter, a UL approved safety disconnect switch with a visible open, which shall be capable of fully disconnecting the Generating Facility from the PUD 's electric system. The disconnect switch shall be located adjacent to PUD meters and shall again be of the visible break type in a metal enclosure that can be secured by a padlock. The visible open disconnect switch shall be accessible to PUD personnel at all times.

The PUD shall have the right to disconnect the Generating Facility at the visible open disconnect switch under the following circumstances:

- When necessary to maintain safe electrical operating conditions;

- If the Generating Facility does not meet required standards; or
- If the Generating Facility at any time adversely affects or endangers any person, the property of any person, the PUD 's operation of its electric system or the quality of the PUD 's service to other Customers.

Nominal voltage and phase configuration of the Generating Facility must be compatible to the PUD system at the point of common interconnection.

The Applicant must provide evidence that the Generation Facility will never result in reverse current flow through the PUD 's network protectors. All instances of interconnection to secondary spot distribution networks shall require review and written pre-approval by the PUD. Interconnection to distribution secondary grid networks is not allowed. Closed transition transfer switches are not allowed in secondary network distribution systems.

Applicant must ensure that generating equipment complies with UL Standard #1741 (UL1741) and IEEE Standards C62.41.1 and C62.41.2. Compliance must be clearly evidenced on equipment and supporting documentation.

### **9.6 Specifications applicable to all inverter-based interconnections**

In addition to requirements contained in Section 4(1) and 4(2), any inverter-based Generating Facility desiring to interconnect with the PUD 's electric system or modify an existing interconnection must meet the technical specifications, as set forth below. A more recent approved version may supersede specifications on the list below.

- IEEE Standard 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, for systems 10 MVA or less.
- UL Standard 1741, Inverters, Converters, and Controllers for Use in Independent Power Systems. Equipment must be UL listed.
- IEEE Standard 929, IEEE Recommended Practice for PUD Interface of Photovoltaic (PV) Systems.
- IEEE Standard 1526m IEEE Recommended Practice for Testing and Performance of Stand-Alone Photovoltaic Systems.
- IEEE Standard 1547.1, Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electrical Power Systems.
- IEEE Standard 1547, Application Guide for Interconnecting Distributed Resources with Electric Power Systems.

If the PUD determines that a particular code is insufficient or inadequate to avoid detrimental electrical disturbances and/or issues, the PUD, in its sole discretion, may establish a higher standard.

### **9.7 Requirements applicable to all non-inverter-based interconnections**

In addition to the requirements contained in Section 4(1) and 4(2), non-inverter-based interconnection requests may require more detailed PUD review, testing, and approval, at Applicant cost, of the equipment proposed to be installed to ensure compliance with applicable technical specifications, in their most current approved version, including:

- IEEE Standard 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, for systems 10 MVA or less.
- ANSI Standard C37.90, IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus.



Applicants proposing such interconnection may also be required to submit a power factor mitigation plan and/or other studies or plans as appropriate for PUD review and approval.

### **9.8 Interconnection Studies**

Once an Application is accepted by the PUD as complete, the PUD shall conduct a site review and shall determine if any additional engineering, safety, reliability or other studies are required. Interconnection studies determine the impact on system performance due to added generation and identify additions and/or upgrades to the electrical system.

If the PUD determines that additional studies are required, the PUD will provide to the Applicant or Generator a Quote letter. The Quote letter shall include a description of the studies and a good faith estimate of cost to perform the studies. The Applicant shall have thirty (30) business days to review the Quote letter and provide the PUD with any deposit required. Failure to return the completed agreements and required deposits within the time frames specified may result in termination of application process by the PUD.

Upon completion of the studies, the PUD shall provide the Applicant with the results of the studies, including any additional interim agreements, such as construction agreements, that may be necessary and a cost Quote to complete the interconnection. If the studies determine that the interconnection is denied pursuant to RCW 80.60, the PUD shall provide notice of denial to the Applicant, and the reasons for the denial.

### **9.9 General Terms and Conditions of Interconnection**

Any electrical Generating Facility must comply with these rules to be eligible to interconnect and operate in parallel with the PUD 's electric system. These terms and conditions apply to all interconnecting Generating Facilities that are intended to operate in parallel with the PUD 's electric system irrespective of whether the Generator intends to generate energy to serve all or a part of their own load; or to sell the output to the PUD or any third party purchaser.

- It is the responsibility of the Generator to protect its facilities, loads and equipment and comply with the requirements of all appropriate standards, codes, statutes and authorities.
- For the overall safety and protection of the PUD system, chapter 80.60 RCW currently limits interconnection of generation for net metering to 0.25 percent of the PUD 's peak demand during 1996, and, beginning in 2014, to 0.50 percent of the PUD's peak demand during 1996. Additionally, interconnection of generating facilities to individual distribution feeders will be limited to 10-percent of the feeder's peak capacity. However, the PUD may, in its sole discretion, allow additional generation interconnection beyond these stated limits, or, if indicated by engineering, safety or reliability studies, restrict or prohibit new or expanded interconnected generation capacity on any feeder, circuit or network.
- To ensure system safety and reliability of interconnected operations, all interconnected Generating Facilities shall be constructed and operated by the Generator in accordance with this agreement and all other applicable federal, state, and local laws and regulations.
- If the interconnected Generating Facility is owned by a third-party, the third-party and the Generator shall both indemnify and hold harmless the PUD for all risks associated with the facility being interconnected to the PUD's system, including liability for the PUD disconnecting the facility. In addition, the Generator executing the interconnection agreement for the third-party Generating Facility shall obtain all legal rights and Easements requested by the PUD for the PUD to access, install, own, maintain, operate, replace or remove its equipment, on the real property where the Generating Facility is located, or at the Generating Facility itself, at no cost to the PUD.

- Prior to initial operation, the Generator must obtain and deliver a certificate of completion to the PUD, execute the Customer Interconnection Agreement and complete any other agreement(s) required for the disposition of the Generating Facility's electric power output. This Customer Interconnection Agreement between the PUD and Generator outlines the interconnection standards, cost allocation and billing agreements, and on-going maintenance and operation requirements.
- The Applicant or Generator shall promptly furnish the PUD with copies of such plans, specifications, records, and other information relating to the Generating Facility and the ownership, operation, use, or maintenance of the Generating Facility, as may be reasonably requested by the PUD from time to time.
- For the purposes of public and PUD personnel safety, any non-approved generation interconnections discovered, or modifications made to existing facilities, will be cause for immediately disconnection from the PUD system.
- To ensure reliable service to all PUD Customers and to minimize possible problems for other Customers, the PUD will review the need for a dedicated-to-single-customer distribution transformer. If the PUD requires a dedicated distribution transformer, the Applicant or Generator is required to pay all costs of the new transformer and related facilities.

### **9.10 Metering**

- Net metering for fuel cells, facilities that produce electricity using thermal energy from a common fuel source, or facilities that use water, wind, solar energy, or biogas as a fuel as set forth in chapter 80.60 RCW. The PUD, at Customer's expense, shall install, own and maintain a kilowatt-hour meter, or meters as the installation may determine, capable of registering the bi-directional flow of electricity at the point of common interconnection at a level of accuracy that meets all applicable standards, regulations and statutes. The meter(s) may measure such parameters as time of delivery, power factor, voltage and such other parameters as the PUD shall specify. The Applicant shall provide space for metering equipment. It is the Applicant's responsibility to provide and install the current transformer enclosure (if required), meter socket(s) and/or junction box. The PUD may approve other generating sources for net metering but is not required to do so.
- Production metering: The PUD requires separate metering for production, capable of being remotely accessed. This meter will record all generation produced and may be billed separately from any net metering or Customer usage metering. It is the Applicant's responsibility to provide and install the meter socket(s) after the Applicant has submitted drawings and equipment specifications for PUD approval. The PUD shall provide and install the production meter(s). All costs associated with production metering will be paid by the Applicant.
- Common meter labeling furnished or approved by the PUD and in accordance with NEC requirements must be posted on the meter base, disconnects, and transformers informing working personnel that generation is operating at or is located on the premises.
- No additional insurance will be necessary for a net metered facility that is a qualifying Generating Facility under chapter 80.60 RCW. This is a facility that is 100 kW or less; and that uses water, wind, solar energy, or biogas from animal waste as a fuel, fuel cells, or that produces electricity and uses thermal energy from a common fuel source. For other Generating Facilities permitted under this program, but not a qualifying facility under chapter 80.60 RCW, additional insurance, limitations of liability and indemnification may be required by the PUD.

- Unless otherwise agreed through a signed interconnection agreement, the Generator will be allowed to generate up to the maximum amount to offset their annual residential or commercial load use. On April 30 of each year, any unused account balance of excess generation by the Customer will be zeroed out and a new account balance will begin on May 1. The PUD does not purchase excess generation generated by the facility under this program, unless it is stipulated in a power purchase agreement. The Customer will be billed for any outstanding load not offset by the generation balance.

### ***9.11 Facility Modification, Expansion, Removal from Service and Sale***

- The Generator may disconnect the Generating Facility at any time; provided that the PUD is given at least 3 business days advance notice by the Generator.
- Prior to any future modification or expansion of the Generating Facility, the Generator is required to obtain PUD review and approval. The PUD reserves the right to require the Generator, at the Generator's expense, to provide corrections, modifications or additions to existing electrical devices in the event of changes to industry standards and requirements.
- Generator shall notify the PUD prior to the sale or transfer of the Generating Facility, the interconnection facilities or the premises upon which the facilities are located. The Generator shall not assign its rights or obligations under any agreement without the prior written consent of the PUD.

### ***9.12 Certificate of Completion***

All Generating Facilities must obtain an electrical permit and pass an electrical inspection by L&I before the facility(ies) can be connected or operated in parallel with the PUD 's electric system. The Generator shall provide the PUD written certification that the Generating Facility has been installed and inspected in compliance with the local building and/or electrical codes. The PUD must review and approve in writing the certificate of completion. The PUD may withhold such approval, and shall have the right to inspect and test the interconnection facilities in accordance with IEEE 1547.1 prior to parallel operation.

### ***9.13 Incentive Renewable Energy Programs***

The Generator may apply for incentive payments for the development and installation of renewable energy. These programs may differ in reimbursement structure and amounts based on equipment used, where it is manufactured, and how much generation is installed. These programs are typically run by local, state or federal agencies. The PUD will assist the Generator in participating in these programs; however, the Generator is fully responsible for meeting the criteria of the program. Incentives may be provided directly through the program sponsor to the Generator, or may be issued by the PUD to the Generator. The PUD will be held harmless from liability in assisting the Generator qualify, participate in, or receive reimbursement.





# ***10 – Transmission and Generation Facility Interconnection Requests***



## 10 Transmission and Generation Facility Interconnection Requests

### 10.1 Transmission and Generation Facility Line Extension General Provisions

The PUD allows interconnection to its transmission<sup>2</sup> system and generation facilities by large commercial, industrial or private generation facilities that need high voltage interconnections, have a large energy demand, or plan to generate energy delivered to the Bulk Electric System (BES). The Federal Energy Regulatory Commission (FERC) regulates the operation transmission system through standards enforced by the North American Electric Reliability Corporation (NERC). Applicants requesting service of over 100 kV are required to meet minimum technical requirements, and have power supply agreements for interconnection.

The PUD's Bulk Electric System transmission consists of approximately 60 miles of 115 kV transmission and four Transmission substations. Should the Applicant's request require interconnection to the Bonneville Power Administration (BPA) or Avista Utilities transmission systems, rather than the PUD's system, the PUD will provide the information needed to request interconnection to those systems.

Transmission interconnections require significant BES engineering and studies to ensure there are no negative impacts on the BES. Construction can take several years after the initial request, and require reliability studies before construction can begin. Applicants are encouraged to request these types of interconnections well in advance of their proposed project commissioning.

### 10.2 Abbreviations and Definitions

- kV – Kilovolts, a measure of 1,000 volts.
- kVA – Kilovolts volt-amps, a measure of true and reactive power.
- kW – Kilowatt, a measure of 1,000 watts of electrical power.
- kWavg – Kilowatt Average, the average demand in kilowatts over a period of time.
- kWh – Kilowatt-hour, a measure of kilowatts consumed over a one-hour period.
- MW – Megawatts, a measure of 1,000,000 watts.
- MVA – Megawatt volt-amps, a measure of both true and reactive power.
- MWavg – Megawatt Average, the average demand in Megawatts over a period of time.
- MWh – Megawatt-hour, a measure of megawatts consumed over a one-hour period.

### 10.3 Transmission and Generation Facility Extension Construction Requirements

Applicants requesting extension of PUD transmission facilities, to serve load or generation, should contact the PUD's Key Accounts Representative through the PUD's Customer Service Department. The Key Accounts Representative will guide the Applicant through the process of applying, providing the needed information, system studies, engineering and design, and construction. The Applicant may be put in direct contact with the PUD's Engineering Manager to discuss the concepts, and be provided the PUD's:

- *Customer Requirements for Transmission Interconnections*
- *Customer Requirements for Transmission Interconnections Appendix A Application*

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<sup>2</sup> **Transmission** – An interconnected group of lines and associated equipment for the movement or transfer of electric energy between points of supply and points at which it is transformed for delivery to customers or is delivered to other electric systems. PUD Transmission is operated at 115 kV and the operations, maintenance and planning is regulated by FERC approved NERC reliability standards as part of the BES.

- *Customer Requirements for Transmission Interconnections Appendix B Technical Requirements*

These documents outline the detailed process to complete a transmission interconnection. The process is summarized in this manual for clarity only. The Applicant is responsible for all costs incurred by the PUD throughout the process. Agreements and payment must be secured and within the timelines specified prior to the PUD performing any services.

The PUD will not begin an assessment of the feasibility of a transmission interconnection until the Applicant submits a completed application, has signed all needed agreements, and submitted sufficient payment for each step. Alternately, the PUD's Engineering Manager may identify that the request to interconnect is applicable to BPA or Avista, rather than the PUD. Both BPA and Avista interconnect with the PUD's Transmission System and have their own Transmission interconnection request processes.

#### **10.4 System Impact and Feasibility Studies**

The PUD's Planning Engineer will determine the need for a System Impact and Feasibility Study once a completed application for transmission interconnection is accepted. The process will follow current PUD engineering practices and be consistent with the processes outlined in the Customer Requirements for Transmission Interconnections. In some cases, due to the impact on other owners of transmission facilities, the PUD may engage BPA or Avista Utilities to complete the studies.

The Applicant will receive a final report when studies are completed. If the studies show the project is feasible the process could move on. Should the report indicate that the project, as designed, is not feasible, the Applicant can withdraw the project or resubmit an alternative plan.

#### **10.5 Land Acquisition and Land Use Planning**

The PUD will, unless otherwise agreed to by both parties, perform all land acquisition activities for the construction of the interconnection. The Applicant will be responsible to fund all land acquisitions and permitting in advance.

#### **10.6 Design and Construction**

The PUD will, unless otherwise agreed to by both parties, perform all design and construction of the Service Facilities. The Applicant will be required to enter into an agreement within the specified timeline to provide funding and authorize the necessary work. Work will not start until funding is secured.

Depending on the nature of the project, additional agreements such as, but not limited to, an Electric Services Agreement, Operations and Maintenance Agreement, Interconnection Agreement and a Property Access Agreement may need to be completed before construction can begin. Agreements will include the identification of the point(s) of demarcation and ownership of certain equipment.

#### **10.7 Review, Testing, Interconnection Agreement and Energize**

Once construction is completed, and before equipment is energized, the new facility and equipment must be tested, as agreed upon. As-built drawings, operating instructions, and other relevant materials must be provided to the PUD by the Applicant. When found in conformance with the PUD's standards for design, the Applicant must tender an Interconnection Agreement for the long-term operation and maintenance of the interconnected facilities.

A Transmission Operations and Maintenance Agreement must also be completed covering the Transmission capacity and Transmission services that must be in place prior to energization. Once all agreements are completed, the PUD shall energize the new facilities. If the PUD does not maintain direct control of the facilities, it shall maintain back-up control if the facilities are deemed vital for system reliability.