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GENERAL REQUIREMENTS

A. SCOPE

1. This **Electrical Service Requirements** Manual contains policies, standards and general requirements for providing overhead and underground service to District customers. Manuals and contents are the property of the District and are to be cared for by the person to whom assigned. Revisions and additions will be issued periodically and it is the responsibility of the manual holder to insert this material so an up-to-date manual is maintained. Manual holders are responsible for notifying the District of name or address changes using the postage paid reply card in the front of the manual.
2. Service entrance equipment and installation to all new customers, or existing customers altering their electrical service, must comply with the District's Electrical Service Requirements (ESR) which is also available on the Internet at <http://www.snopud.com>.
3. Nothing in this manual shall be so interpreted as to conflict with the regulations of the State of Washington or other regulatory bodies having jurisdiction.

B. AVAILABILITY OF SERVICE

1. The owner, the owner's agent, or the electrical contractor making the installation must consult the serving utility regarding the utility's service entrance requirements for equipment location and meter equipment requirements **before installing the service and equipment**. Provisions for a meter and related equipment, an attachment of a service drop, or an underground service lateral must be made at a location acceptable to the serving utility. The point of contact for a service drop must permit the clearances required by the NEC (WAC 296-46B-230). *Any wiring installed without first contacting the District to determine the service entrance location is done at the risk of having to change the service location to conform with these requirements.*
2. Any customer who desires electrical service from the District's facilities for new and/or additional load shall contact the District as much in advance as possible to determine the availability of electric service facilities. The District reserves the right to determine availability of voltage and phase of service as well as service route and service equipment location.
3. For single family or duplex residential, not more than one service of like voltage will be allowed to any one building. The service entrance shall be located so that no more than one set of service wire attachments to the building will be required.
4. For single-family residential zero-lot-line townhomes, an individual service run and individual meter base/socket will be allowed for each unit. All service wire and meter base/socket installations will be owned and maintained by the customer. A meter base/socket must be placed on the front wall of each townhome individual living unit or, with prior District approval, in another location accessible to District representatives.

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5. For commercial service one service of like voltage to any one building is preferred, however, additional services may be permitted for different voltages, phases or rate schedules (for example, a commercial unit and a residential unit in the same building). Determination of whether to allow such additional services shall depend on the District's ability to connect to existing facilities. **Contact the District for evaluation prior to design and installation.** All service entrance locations and meters shall be installed in one location on the building.

All underground commercial service conductors shall be customer installed, owned and maintained and permanently labeled at the connection point as "Customer Owned" along with the service address and unit numbers.

C. APPLICATION FOR SERVICE

1. Each customer desiring new or altered electrical service must complete a New Service Questionnaire and may also be required to sign an application for service before service is supplied.
2. In Snohomish County each customer is required to consult with Snohomish County Planning & Development Services for compliance with county code Chapter 30.62, Critical Area Regulations prior to requesting new service or alterations to an existing service. Customers in Island County are recommended to check with that county for similar requirements. All customers are recommended to check with local jurisdictions for these or other requirements.
3. Acceptance of service shall be subject to compliance with the requirements of Snohomish County Critical Area Regulations or other agencies as required, the District's Electrical Service Regulations, Customer Service Regulations and applicable rate schedule or schedules in effect at the time of application.
4. Customers shall provide the District with accurate connected load data and accurate plot plans showing the location of necessary property corners, property lines, roads and location of other buried utilities, as required when applying for service.

D. SERVICE ENTRANCE / METER LOCATION

1. The owner, the owner's agent, or the electrical contractor making the installation must consult the serving utility regarding the utility's service entrance requirements for equipment location and meter equipment requirements **before installing the service and equipment.** Provisions for a meter and related equipment, an attachment of a service drop, or an underground service lateral must be made at a location acceptable to the serving utility. The point of contact for a service drop must permit the clearances required by the NEC (WAC 296-46B-230). **Any wiring installed without first contacting the District to determine the service entrance location is done at the risk of having to change the service location to conform with these requirements.**

Note: Any deviation from the District's **Electrical Service Requirements** due to unusual electrical needs or circumstance should be presented to

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the District in the design/planning stage and **must be submitted to the District for consideration in advance of commencing construction.** This Variance may require various District departmental review and therefore require additional time prior to notification of approval/denial determination. Refer to Variance Application at the end of this section.

E. POINT OF CONNECTION:

The point of connection is the point at which the secondary conductors are attached to the customers or the customer's conductors/equipment. The District is responsible to maintain acceptable voltage on District installed secondary conductors to the point of connection. The customer is responsible to maintain acceptable voltage on all customer installed secondary conductors to the point of connection.

OH Residential and Commercial - at the customer's service entrance mast.

UG Residential - at the metering point (meter base or current transformer).

UG Temporary Residential or Commercial - at the pedestal, pad-mounted transformer or the secondary termination enclosure.

UG Commercial Secondary Metered - at the pedestal, pad-mounted transformer or the secondary termination enclosure.

UG Commercial Primary Metered - District Owned Transformer - at the transformer, pedestal or the secondary termination enclosure.

UG Commercial Primary Metered - secondary voltage customer responsibility

If the District disconnects the secondary service at the customers request for repairs, it will not be reconnected unless there's an **approved** electrical permit from the appropriate governmental agency on the site. If emergency repairs are done during normal working hours an electrical permit must be on site, or in the case of emergency repairs during other than normal working hours, arrangements may be made. Notify the District in advance as soon as possible.

Any concerns regarding this practice should be directed to the State Department of Labor and Industries, or governing authority.

F. SERVICE IDENTIFICATION / METER LABELING

1. Before service is energized and a meter can be installed, the customer must obtain a valid service address from the proper agency. When the meter is installed and sealed, it is designated in the District's official record as the meter serving that premise. Apartment unit or space number are considered part of the valid address.
2. It is the responsibility of the owner or manager of multi-unit complexes to notify the District of any changes in numbering so that the District's Meter Department can verify metering circuits. Such notice must be given in writing immediately to Customer Service, to permit re-designation of meters serving the premise. The

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customer shall be responsible for renumbering both the premises and meter sockets prior to dispatch of the Meter Department.

3. Each meter position and each service switch or breaker shall be clearly and **permanently** identified by the customer to indicate the particular location supplied by it. The relation of the meter socket, breaker and location served must be easy to identify. *Meters will not be installed nor service energized until marking is complete.*
4. Markings shall be legible for the period of occupancy. Clear identification means an apartment/store space letter or number, or street address/number. The store name may be included; however, it does not constitute a clear designation in itself.
5. Permanent Identification shall be described as properly installed phenolic labeling for those pieces of equipment that correspond to the premise being served.
6. Multi-unit meter base installations and other areas such as commercial buildings with meters and equipment installed on building walls in an alley or on the back walls of a strip mall, where there may be confusion of which premise is served by which meter, must be permanently identified with phenolic labeling in compliance with the following requirements. The account will remain in the owner's name until the units have been verified: (Refer also to 5-E)

Material and Format of Labels

Engraved phenolic labels shall be used.

Labels shall have plain block letters or numbers with a contrasting background.

Information on Labels

Labels shall clearly indicate corresponding unit served by each meter.

Placement of Labels

Labels will not be placed such that they obscure any information printed or labeled on the equipment.

Position the label so that it is readily visible and that it is obvious what equipment the label describes.

Attachment of Labels

Labels shall be smoothly attached to the device with no overlaps, protrusions or sharp edges and corners.

Labels shall be applied in a craftperson-like manner and never applied over existing phenolic labels.

Labels may have self-adhesive backs to aid in installation, but each label shall have at least 2 holes (larger labels shall have at least 4) and be secured to the equipment with appropriate sized pop-rivets to keep the label from being unintentionally removed. All labels shall be installed and secured with pop-rivets or screws (use caution when drilling and installing pop-rivets) before they will be accepted by the District.

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G. TYPES OF SERVICE

1. Non-Permanent Service
 - a. Services, which in the District's opinion shall not be in continuous use for at least five years, shall be considered non-permanent.
 - b. These services shall meet all requirements for temporary service, secondary service and/or primary service, whichever applies.
 - c. Special customer charges will apply in accordance with the District's Customer Service Regulations.
2. Temporary Construction Service
 - a. Temporary service, either overhead or underground, shall be limited to a maximum of eighteen months.
 - b. Phase and voltage limits shall be the same as for permanent services.
3. Permanent Single Phase Service
 - a. The District will supply to a single customer 120/240V single phase up to a maximum service entrance equipment rating of 1,000 amperes.
 - b. The District will serve motor loads of up to and including 5 HP single phase.
 - c. Any requirement in excess of a. and b. above shall be by three phase service.
4. Permanent Three Phase Service
 - a. The availability of service for three phase equipment to be used shall first be determined at any District office before proceeding with the wiring.
 - b. The three phase service entrance equipment shall be installed at a location designated by the District.
 - c. Motors larger than 5 HP will be served three phase.
 - d. Three phase service shall be a 4-wire configuration.

H. VOLTAGES AND PHASING

1. The District's primary distribution voltages may differ at various locations. Consult Customer Engineering for the high voltage classification. Secondary single phase voltage of 120/240V is normally all that is available in residential areas.
2. The District will endeavor to provide electrical service within plus or minus 5% of nominal voltages. Delivery voltages and phases will be those available at the point service is desired; and if other phases or voltages are necessary, they may be made available by the District in accordance with the provisions of its Electrical Service Requirements Manual and Rate Schedules then in effect. The District reserves the right to refuse a new three phase service at a particular voltage if the proposed new load can be served from an existing three phase transformer bank.

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3. Nominal secondary delivery voltages supplied by the District are:
 - a. Overhead and underground secondary services from an overhead primary system.
 1. 120/240 volt - single phase
 2. 240/480 volt - single phase
 3. 120/208 volt - single/three phase wye (network metering)
 4. 277/480 volt - three phase wye
 5. Open Delta three phase is available in certain cases. Contact the District Customer Engineer for determination.
 - b. Underground secondary service from an underground primary system.
 1. 120/240 volt - single phase
 2. 240/480 volt - single phase (from 15 kVA & 100 kVA transformers only)
 3. 120/208 volt - single/three phase wye (network metering)
 4. 277/480 volt - three phase wye
4. The Customer/Contractor shall identify parallel conductors.
5. Service Voltages Supplied by the District in Excess of 600 Volts
 - a. Where service voltages are in excess of 600 volts between conductors, contact the District for its primary metering requirements.
 - b. For primary metered service to three phase padmounted transformers or three phase overhead transformer banks connected to the District's primary distribution system voltage (12.47kV L-L), those transformer winding configurations shall be wye-grounded on the primary, with no windings connected in delta (including any buried delta windings).

I. COST OF SERVICE

1. The cost of providing electrical service to all customers is governed by the District's **Customer Service Regulations** currently in effect.
2. The District will charge the customer for any special costs incurred in obtaining permits, easements or other documents required in order to provide the customer with electrical service.

J. POSSIBLE DELAYS

1. The District may not have a sufficient stock of materials to complete a job once the service application has been completed.
2. The District will not order any special equipment or materials to complete any particular job until certain requirements have been met. The purchase of special materials such as transformers and conductors can require several months to obtain.
3. Any wiring performed without first checking with the District is done so at the risk of having to change the service entrance equipment and/or location of the equipment.

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4. In many cases, easements may be required for facilities located on private property. Line construction will not begin until the necessary easements have been obtained.

K. ELECTRICAL WIRING PERMIT

1. An electrical permit is required prior to start of wiring installation.
2. This permit is available from the cities of Everett, Lynnwood, Marysville and Mountlake Terrace at their respective city offices. For all other areas within Snohomish County and Camano Island, this permit is available at any State of Washington Department of Labor and Industries office.
3. The permit must be filled out completely, concisely, legibly and signed and placed in the service panel for inspections.
4. If the District disconnects the secondary service for repairs, it will not be reconnected unless there's an approved electrical permit on the site. If emergency repairs are done during normal working hours an electrical permit must be on site, or in the case of emergency repairs during other than normal working hours, other arrangements may be made. Notify the District in advance as soon as possible.

Any concerns regarding this practice should be directed to the State Department of Labor and Industries, or governing authority.

L. INSPECTION AND CONNECTION

1. It is the customer's responsibility to have all inspections performed by representatives of the governmental agencies having jurisdiction over said inspections.
2. The customer must have on site an **approved** permit for service from the appropriate governmental agency for service before a service can be energized. In the un-incorporated areas of Snohomish or Island county, the State of Washington Department of Labor & Industries would be the appropriate agency. Inside the cities of Everett, Lynnwood and Mountlake Terrace the City Electrical Department would be the appropriate agency.
3. The District's inspector has the right, but not the obligation, to inspect the customer's wiring or equipment before or during the time service is supplied.
4. The District's inspecting representative is authorized by the District to make sure the customer's service entrance equipment is in compliance with these requirements and the District's policies.
5. Energizing The Service:

When a PUD representative arrives to initially connect a new service, they must have access to the main disconnect in order for service to be energized.

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M. SERVICE ENTRANCE EQUIPMENT

1. The customer will be responsible for providing and installing service entrance equipment and wiring to conform with all applicable National and State codes and the requirements contained in this manual.

2. Multiple Services

Customers shall not tie the District's primary feeders together through their services at any time.

Refer to ESR Section 6, Generation Interconnection, for more details regarding standby generation and other requirements that may apply.

3. 600 Volts or Under

Only UL listed or approved service entrance equipment of the proper rating may be installed.

4. Over 600 Volts

At the District's option, service entrance equipment that is not UL listed or approved may be used, provided listed or approved equipment is not available and the District has been given adequate time to examine equipment and approve its use.

5. Grounding Service Equipment

- a. All service equipment shall be grounded to meet the national, state and local utility rules as outlined in these Electrical Service Requirements.

- b. The use of water pipe fittings will not be permitted as a single point ground.

6. Switchboxes

Service switches and allied equipment exposed to the weather shall be of a rain-tight type and shall be factory built for the purpose.

7. Service Entrance Wires and Cables

- a. The size of service entrance conductors shall be determined from the connected load and must not be less than the minimum size conductors as determined by the National Electrical Code.

- b. All individual three phase service installations require a neutral (fourth) wire to be provided. The secondary neutral wire shall be bonded (via the neutral lug/bus) to the customer's equipment or common ground connection.

- c. All individual three phase service installations require a neutral (fourth) wire to be provided and installed in the service conduit and to extend a minimum of 18" beyond the weatherhead for connection to a neutral conductor from the District's supply transformer bank ground. It must meet the minimum size as set out in the National Electrical Code, Table 250-94 and be color coded **"white"**.

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- d. The high (wild) leg conductor of a 240 or 480 volt three phase four wire delta service shall be color coded **“orange”**.
- e. The District will not extend service conductor more than 15 feet inside any building lines (WAC 296-46).
- f. When aluminum conductors are used, the service panel must be UL listed or approved and clearly marked by the manufacturer that it is acceptable for aluminum conductors. The customer shall supply and install oxide inhibitor on all aluminum conductors used in conjunction with the electrical wiring terminations.
- g. Parallel conductors shall be identified.

N. WEATHERHEADS, CONDUITS AND FITTINGS

1. The District will allow a maximum of six conductors single phase and eight conductors three phase per conduit. Only three conduits per service entrance shall be used with overhead service, unless written permission is obtained from the District by using the District's Variance Application. Refer to 2.U., Form 2-1, Variance Application.
2. The size of conduit necessary is dependent upon the size of conductors and upon the number of conductors in the conduit. Refer to NEC Chapter 9 for overhead requirements or Section 4-E for District owned underground service.
3. Flexible conduit shall not be used.
4. Limit of one LB per conduit run, which shall be outside and exposed at all times.
5. No Customer owned equipment may be installed between the meter-mounting equipment and a District meter.

O. ACCESS / RIGHT-OF-WAY / EASEMENTS

1. Easements are required for all extensions of the District's primary facilities on private property as well as secondary services as required. The customer or developer shall provide the District with a legal description of the building site or proposed development and an acceptable easement covering the facilities located on their property.
2. No structures of any kind shall be constructed or permitted to be constructed within, over, or upon the easement area without written approval of the Manager of the District.
3. Any surveying necessary for the location of property corners shall be provided by the customer.
4. Authorized representatives of the District have the right to enter a customer's property during reasonable hours to perform necessary functions such as meter reading, maintenance, repairs, testing, installation, or removal of the utility's property. Utilities must provide photo identification to utility representatives who are authorized to enter

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customers' premises. Customers have the right to see the utility-provided identification of electric utility representatives before allowing entry to the customer's property (WAC 480-100-168).

5. In order for the District to access its facilities during reasonable hours, without the need for the District to make special arrangements, where the District's meters are located in a designated electrical or meter room all customers must comply with the District's ESR which requires the installation of a BEST Access locking system as defined in the ESR Section 5. Customers who have installed or are installing gates with padlocks must allow the installation of a District furnished locking device to adjoin the customer's lock. Customers installing electronic access gate(s) must install a BEST Access keyed switch locking system keyed to the District's "P" key for access. Customer Service Regulations 2.3(c).
6. The customer shall provide and maintain a minimum of a 10 foot wide gravel road with an adequate base to support the heavy equipment required for the installation, maintenance and removal of the District's distribution facilities. This road shall be not more than 15 feet from the District's electrical service facilities.

Exception: *A safe walking access shall be provided at all times for District personnel to the meter and service drop location.*

7. Construction will not begin until adequate easements have been obtained. Legal descriptions of easements areas will be determined by the District.

P. INTERFERENCE WITH QUALITY OF SERVICE

1. The customer's use of the District's electrical facilities shall not result in any interference with the quality of his own service or that of another customer. In the case of devices in which large blocks of load are recurrently switched on and off, such as electric boilers, welders, heaters, motors, non-linear loads, or where the customer desires voltage control within unusually close limits, the District may require the customer to provide, at his own expense, special or additional equipment.

To minimize all interference with the quality of his own service or that of other customers, the District requires the customer's electrical facility to meet the power quality standards presented in Section 10. Recommended Practices for Individual Customers of the latest **IEEE Std. 519, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems**, in addition to requirements in other parts of this Electrical Service Requirements Manual.

2. Plug-in Hybrid Electric Vehicles (PHEV), Battery Electric Vehicles (BEV) and energy efficient devices:

The District encourages PHEV's and BEV's as well as energy efficient devices such as heat pumps and others as determined by the District. This policy does not apply to commercial/industrial applications. The following requirements will be fulfilled when integrating such equipment/devices into the District's electrical distribution system:

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a. Customers that will not incur District costs:

Customers installing energy efficient devices (heat pumps up to 4 tons and other equipment) with less than 127 amps of starting current (LRC) to their existing electrical service panels will not be charged for system (transformer and/or wire) upgrades. All heat pumps require soft start or assisted starts.

Customers installing heat pumps over 4 tons to their existing electrical service panels will be allowed up to 140 amps of starting current (LRC). All heat pumps require soft start or assisted starts.

Customers adding non-motor loads to their existing panels will not be charged for system upgrades and/or secondary wire upgrades. This includes Plug in Hybrid Electric Vehicles (PHEV), Battery Electric Vehicles (BEV) and other such devices.

b. Customers that will incur District costs:

Customers increasing their panel capacity for added load will be charged a Meter and Transformer Fee and increased wire fee.

Customers whose load causes LRC greater than 127 amps or, for Heat Pumps over 4 tons and greater than 140 amps will be charged for system upgrades.

Customers requesting 480 volt single phase (will need city/county approval) will be charged for system upgrades.

Customers requiring the system be upgraded from single phase to three phase will be required to pay all charges and fees associated with the upgrade (will need city/county approval).

c. Should the added load for energy efficient devices affect the primary distribution system, the District will upgrade the system as necessary up to the 3MW load beyond which the District's New Load Policy will apply.

d. Cities/Counties are required to notify the District on the application of PHEV's and BEV's in their service territory and include this notification as part of their electrical service application process.

3. Starting Limitations (Motors)

a. Single phase motors, up to and including 5 HP may be served by single phase at 240 volts. Special written approval by the District is required for single phase motors larger than 5 HP.

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- b. All single phase motors shall not exceed the maximum locked rotor currents listed in the following table, unless approved in writing by the District.

**Single Phase Motor Maximum Allowable Locked Rotor Currents
(Derived from NEMA Standards)**

<u>Rated Size</u>	<u>@ 120 Volts</u>	<u>@ 208 or 240 Volts</u>
2 HP or less	80 Amperes	57 Amperes
3 HP		83 Amperes
4-5 HP		140 Amperes

- c. All heat pumps require soft start or assisted starts.
- d. In certain cases, Open Delta three phase (240 Volt) service is available to serve three phase motors up to 15 HP. Special written approval by the District is required for three phase delta motors larger than 15 HP. Contact the District Customer Engineering Department for determination.
4. Special Load Limitation (Commercial and Industrial)
- a. Where non-inducting loads are energized from the District's secondary system and are to be switched on and off more frequently than once each hour, the maximum increased load shall not be greater than 100 kilowatts three-phase, or 30 kilowatts 240 volt single phase without written permission of the District.
- b. Loads in excess of these amounts may require the customer to furnish and install special switching equipment to reduce the magnitude of the unit load to be cycled on and off.
- c. Inquiries as to the necessity of special equipment should be directed to Customer Engineering.

Q. MINIMUM POWER FACTOR LIMITATION

Unless otherwise specifically agreed, the District shall not be obligated to deliver electric energy to the Customer at any time at a power factor below 75% (refers to average overall power factor for each individually metered service).

R. PROTECTIVE DEVICES

It shall be the responsibility of the customer to provide suitable protective apparatus on all motor installations including adequate protection against single phasing (loss of one single phase with two still energized), on three phase motors.

S. UPGRADING OR CONVERSION OF SERVICE

All upgrading, rewiring or conversion shall be in compliance with District policies and procedures in effect at the time of the upgrading, rewiring or conversion. Refer to District Policy CUS-PL-1.

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T. HAZARDOUS ELECTRICAL SERVICE

1. Whenever the modification or installation of any service entrance equipment or wiring is in such a condition as to be dangerous to life or property, the person, firm, partnership, corporation or other entity owning, using or operating as determined by the District, the District shall immediately disconnect the electrical service. The District shall notify the customer of the repairs to be made. The District shall not reconnect the service until such repairs and changes as required to remove the danger to life or property are made to the satisfaction of the District.
2. Whenever the modification or installation of any service entrance equipment or wiring is not in accordance with the Districts **Electrical Service Requirements**, except for conditions in paragraph 1 above, the person, firm, partnership or other entity owning, using or operating it shall be notified by the District and shall **within ten working days** or such further reasonable time as may upon request be granted, make such repairs to conform to the Districts **Electrical Service Requirements** and National Electrical Code (NEC).
3. **The District reserves the right to discontinue service to any customer who fails to make repairs and/or changes required to remove the danger to life or property.**
4. Disconnection of service shall continue until hazardous conductors and/or equipment are put in a safe and secure condition.
5. If the District disconnects the secondary service for repairs, it will not be reconnected unless there is a new *approved* electrical permit on site when it is required from the State of Washington Department of Labor and Industries or the appropriate governmental agency. If emergency repairs are done during normal working hours an electrical permit must be on site, or in the case of emergency repairs during other than normal working hours, other arrangements may be made. Notify the District in advance as soon as possible.

Any concerns regarding electrical permit and inspection requirements should be directed to the State of Washington Department of Labor and Industries or the appropriate governmental agency.

U. GENERATION - PERMANENT / TEMPORARY / PORTABLE

This Section covers backup Generation not connected parallel to the District's system only. For generation systems in parallel with the District's system refer to Section 6 Generation Interconnection Requirements.

When any of the types of generation systems defined below are used, they must be totally isolated from the metered service to prevent serious danger to District linemen.

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1. Permanent Generation
 - a. In commercial or industrial applications a Transfer Switch/Generator Connection Cabinet must be installed. *Preferably, the Transfer Switch/Generator Cabinet shall be located on the exterior of the building adjacent to the service entrance near the meter.* The Transfer Switch/ Generator Cabinet shall have provisions for a visible lockout/tagout.
 - b. The methods shown in Figures 2-1 & 2-2, with switches that disconnect the loads from the line side before those same loads are connected to the generator are acceptable methods of installing a standby/emergency generator.
 - c. Installation of the Transfer Switch/Generator Connection Cabinet shown in Figures 2-1 & 2-2 must be approved by the appropriate Governmental Agency and the Snohomish County Public Utility District.
2. Portable Generation
 - a. This temporary, moveable generating system is often used by individual customers during temporary outages.
 - b. To assure the safety of District linemen and to avoid potential damage to customer devices when portable generators are used all electrically operated devices shall be connected directly to the portable generator.
 - c. Portable generators shall not be plugged directly into a building outlet receptacle creating backfeed safety hazard for the District and potential damage to customer equipment.
 - d. All nonessential lighting and appliance circuits should be turned off before connecting a generator.
 - e. Damage to house wiring, appliances and the generator may result from exceeding the capacity of the generator (this capacity is provided on the generator nameplate, usually in watts).
 - f. The method shown in Figures 2-3 is an acceptable method of installing a standby/emergency generator.
3. Emergency Generation

A generating system permanently installed, legally required and classified as emergency by Municipal, State, Federal or other codes, or by any governmental agency having jurisdiction. This system is intended to automatically supply illumination and or power to designated areas and equipment in the event of failure of the normal supply when safety to human life is involved, as indicated in Article 700-1 of the NEC.

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4. Legally Required Standby Generating System

A permanently installed system required and so classified as legally required standby by Municipal, State, Federal or other codes or by any governmental agency having jurisdiction. This system is intended to automatically supply power to selected loads (other than those classified as emergency systems) in the event of failure of the normal supply as indicated in Article 701 of the NEC.

5. Optional Standby

A system permanently installed in its entirety which is designed to protect private business or property, where safety to human life does not depend on the performance of the system. The system can be automatic or manual as indicated in Article 702 of the NEC.

It must be noted that a single circuit breaker in the main panel does not meet the requirements of 702-6 which says:

“702-6 Transfer Equipment. Transfer Equipment shall be suitable for the intended use and so designed and installed as to prevent the inadvertent interconnection of normal and alternate sources of supply in any operation of the transfer equipment”.

6. Cogeneration: Refer to Section 6 Generation Interconnection Requirements if operated in parallel with the District's system.

The sequential generation of electric energy and useful heat from the same primary source of fuel for industrial, commercial, heating or cooling purposes.

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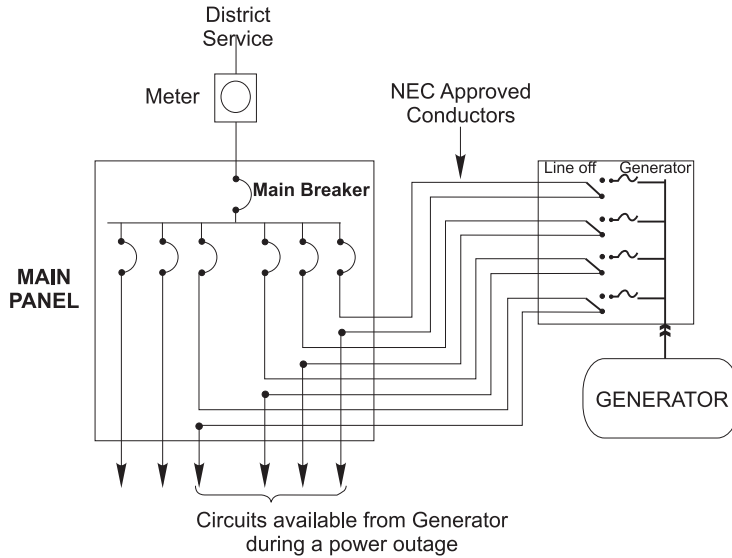


FIGURE 2-1

Transfer Switch/Generator Connection Cabinet

Preferred Location For Commercial / Industrial Installations On The Exterior Of The Building Adjacent To The Service Entrance Near The Meter

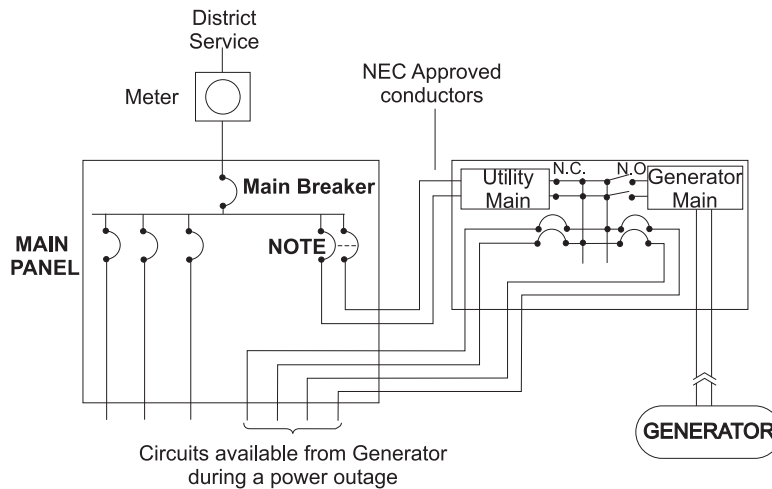


FIGURE 2-2

Transfer Switch/Generator Connection Cabinet

Preferred Location For Commercial / Industrial Installations On The Exterior Of The Building Adjacent To The Service Entrance Near The Meter

NOTE: This breaker shall be the same size as the Utility/Generator mains.

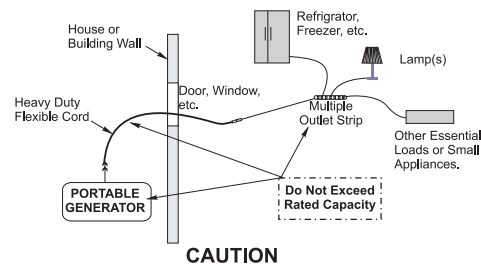


FIGURE 2-3

To assure safety of District linemen and to avoid potential damage to customer devices when portable generators are used all electrically operated devices shall be connected directly to the portable generator.

Portable generators Shall Not be plugged directly into any building outlet receptacle creating a backfeed safety hazard for the District and potential damage to customer equipment.

Damage to the house wiring, appliances, heavy duty flexible cord, and/or multiple outlet strip may result from exceeding their rated capacity. Damage to the generator may also result from exceeding the rating of the generator. This capacity is usually given on the generator nameplate in watts.

Section 2. General Requirements

V. FORM 2-1 — VARIANCE ROUTING



PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY

INTERNAL VARIANCE APPLICATION ROUTING

(Signatures, Approval / Denial to be noted on Actual Variance Form)

Route To:	Mailstop:
1. _____ <i>Designer / Engineer / Engineering Services</i>	
2. _____ <i>Everett / Regional / Distribution Engineer Svcs. Mgr:</i>	
3. _____ <i>Construction Superintendent:</i>	OC / HL
4. _____ <i>Meter Dept. Superintendent:</i>	OM
5. _____ <i>Meter Reading Manager:</i>	EB
6. _____ <i>Standards:</i>	02


Routing:

- Everett / Regional / Engineering Services; Route to appropriate Mgr. and to Construction Superintendent-OPS for review.
- South County Engineering route to Distribution Services Manager and to Construction Superintendent-HL for review.
- Other Regional Engineering offices, route to appropriate Distribution Services Manager.
- Additionally, all variances will be reviewed and approved / denied by the District's Standards Department.
- Departments unaffected by the variance may be omitted from this routing list.
- Standards will be the final reviewer of the Variance Request and send a copy of the approved or denied Variance to the appropriate engineer or manager to notify the requestor. Standards will file the original variance request and send a copy to the originator.

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Section 2. General Requirements

W. FORM 2-2 — VARIANCE APPLICATION

 PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY VARIANCE APPLICATION FOR DEVIATION FROM STANDARD SERVICE REQUIREMENTS			
Date: / /		Service Address:	
Customer:	Address:	Phone: ()	
Eng./Architect: Phone: ()	Contractor: Phone: ()	Electrician: Phone: ()	
Type of Service:	<input type="checkbox"/> O.H. <input type="checkbox"/> U.G.	Voltage	Load
Prints Available:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Estimated Date of Service / /	
Other Approvals Required:	<input type="checkbox"/> City	<input type="checkbox"/> County	<input type="checkbox"/> Labor & Industries
Requested Date Variance Application Reply Is Needed: ___/___/ <i>(Adequate time for internal processing (10 day minimum) must be allowed)</i>			
Variance Requested: (include specific ESR reference(s) that cannot be complied with and reason for request).			
Reason for Request:			
Sketch: (attach other documents as necessary)			
Complete <i>all</i> Variance information in full and submit with a copy of the appropriate New Service Questionnaire. Variances must be approved by all Managers and departments affected by requested Variance, including deviation from Electrical Codes, Standards and Electrical Service Requirements or Variance will be denied.			
Variance Request Reviewed and Approved by:			
Customer/Distribution Designer/Engr. _____ Date: ___/___/___		Regional/Distribution Engr. Mgr. _____ Date: ___/___/___	
Construction Superintendent: _____ Date: ___/___/___		Meter Dep't. Superintendent: _____ Date: ___/___/___	
System Planning & Protection Eng: _____ Date: ___/___/___		System Planning & Protection Mgr.: _____ Date: ___/___/___	
Meter Reading Mgr.: _____ Date: ___/___/___		Other (Identify _____): _____ Date: ___/___/___	
Standards: _____ Date: ___/___/___		Requesting Customer Notified By: _____ Date: ___/___/___	
Variance Request Approved: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Conditional on performing The following requirement (s):			

File: ADM 3.2-ESR

Rev. 12/24/2013

ELECTRICAL SERVICE REQUIREMENTS

New: 10/90 Revised: 1/4/2017

