SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

Electrical Service Requirements

ESR BULLETIN

January 2, 2014

ATTENTION: **ELECTRICAL CONTRACTORS, SUPPLIERS AND DISTRICT ENGINEERING, CONSTRUCTION & OPERATIONS PERSONNEL**

SUBJECT: **Electrical Service Manual (ESR)**

Several revisions have been made to the ESR since the last publication. Please find enclosed the revised documentation to be inserted in your manual. Current revisions are shown in red with a black vertical bar on the left border. A brief description of the revisions are as follows:

Section 2. General Requirements

Pages 2-17 and 2-18 Variance Request form revised

Section 4. Underground Service

Pages 4-41 and 4-42 revised.
Page 4.41 provides more detailed requirements for a Vault Room.
Page 4-42 specifies 20' of excess conductor required to comply with Figure 4-21.

Section 5. Meters and Service Entrance Equipment

Page 5-15 provides more detail for required door hardware required for Meter Rooms.

Section 6. Generation Interconnection

Pages 6-16 revised to provide more detailed informaion regarding the visible-open lockable disconnect switch requirement.

All requirements are effective immediately. In order for you to have the most current information available for reference please update your assigned ESR manual with the enclosed pages without delay.

NO. 45

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. _____
   Designer / Engineer / Engineering Services

2. _____
   Everett / Regional / Distribution Engineer Svcs. Mgr:

3. _____ **OC / HL**
   Construction Superintendent:

4. _____ **OM**
   Meter Dept. Superintendent:

5. _____ **EB**
   Meter Reading Manager:

6. _____ **02**
   Standards:

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.

Rev. 12/24/2013

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: ☐ O.H. ☐ U.G. Voltage Load

Prints Available: ☐ Yes ☐ No Estimated Date of Service / /

Other Approvals Required: ☐ City ☐ County ☐ Labor & Industries

Requested Date Variance Application Reply Is Needed: ____/ _____/
(Adequate time for internal processing (10 day minimum) must be allowed)

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 all 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: ☐ **Yes** ☐ **No** ☐ ***Conditional on performing The following requirement (s):***

File: ADM 3.2-ESR Rev. 12/24/2013

O. VAULT ROOMS

Customer-furnished transformer vault rooms shall be submitted to and approved by the District **prior to construction**, in full compliance with NEC Article 450.41 through 450.48, for each individual installation and in accordance with the minimum requirements listed below:

1. The size of the transformer(s) shall determine the size of the vault, size of oil entrapment sill or sump, access size and amount of ventilation required.
2. A floor drain or sump shall be provided if there is a possibility of water entering the vault. Such drainage shall be located so that oil spillage cannot enter it.
3. The vault walls, floor and ceiling shall be solid concrete.
4. The room shall be illuminated by permanent fixture(s) with a switch inside next to the latch side of the door, with a minimum of 10 foot candles per square foot. A power outlet shall also be provided in the room.
5. Permanent transformer lifting eyes in the ceiling shall be provided.
6. 3-hour fire door(s) shall be provided in accordance with NEC 450.43 and a heavy duty panic bar exit device (***Precision No. 4R0FL5103-603, 703A or 808A trim***) and heavy duty automatic door closure (***Stanley No. D-4550- Std.***) shall be installed on the door(s). Key boxes and/or other panic bar and automatic door closures from alternate manufacturers are not acceptable. The door shall open towards egress of the room. During the construction phase, the panic bar exit device shall be equipped with a BEST Access Systems construction core on the outside of the door. When the vault room is ready to be energized, the District will furnish and change the construction core out to a District's "P" tumbler series which will then accept only the District's master "P" series key. The locking system shall limit access to qualified District employees only and not allow access to unqualified individuals (WAC 296-307-36230).

   For lock, automatic closure and exit bar device information contact:

   Contract Hardware, Inc
   Attention: Lynne Hufstedler
   12100 NE 195th St. Suite 250
   Bothell, WA 98011
   Phone: 1-206-298-4770
   Fax: 1-206-298-4777

7. The owner and his/her agents and/or the homeowners association of the building shall be responsible to install, retain and maintain the District's required BEST knobset, panic bar exit device and automatic door closure for the life of the service to the premises or the electrical service to the building will be subject to disconnection. Should any maintenance or replacement of this customer owned equipment be necessary an authorized District employee shall assist the customer with the work.

8. The District shall furnish and install a sign on the exterior door stating "Electrical Vault Room". In multiple unit complexes, the customer shall provide building identification signage.

9. It is the customer's responsibility to insulate transformer vault rooms so that sound or transmitted vibration to other areas of the building are minimal. Transformer vault rooms must meet or exceed requirements of the applicable laws and noise ordinances of the Washington Administrative Code.

10. Foreign pipes and ducts shall not enter or pass through transformer vaults (NEC 450-47).

P. MAINTENANCE

Maintenance of District-Owned Underground Service Conductors:

The District will not charge for normal maintenance of underground service. If a fault occurs in a conductor as a result of improper backfill or dig-in damage caused by a customer or contractor, charges for repair will be determined by the District's Claims Department and billed to the responsible party.

Q. INCREASING CAPACITY - EXISTING VAULT LOCATION

1. When adding secondary feeds to an existing energized padmount transformer, secondary handhole or pedestal, stop outside the vault and provide 20' of excess conductor and a work hole 3 foot wide x 3 foot deep x 4 foot back from vault for **District personnel to penetrate the vault, extend the conductors and/or conduit(s) and make the connections.**

2. Any costs associated with damage and repair to the existing primary, secondary(s) or ground wires are the responsibility of the customer/contractor.

3. **Under no circumstance shall the Customer penetrate the wall of an existing energized vault with either conduit or conductor. Only District personnel are authorized to penetrate into an existing energized vault**.

4. Contact engineering to determine which corner of an existing vault is available for the service to enter.

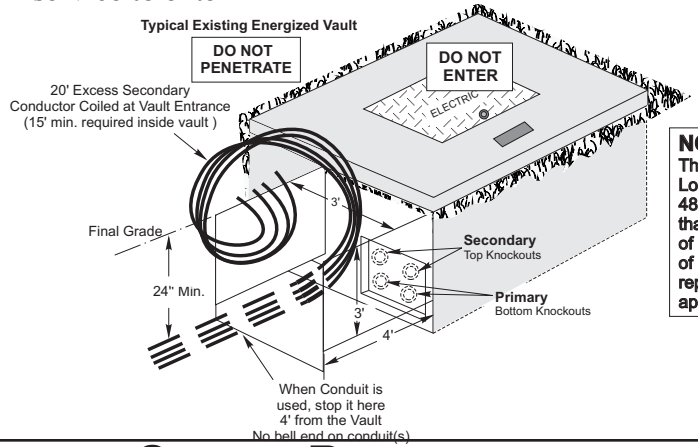


FIGURE 4-21

NOTE:
The Customer Shall Notify Utilities Underground Location Center by calling 811 or 1-800-424-5555 48 Hours not less than two business days or more than ten business days before the commencement of excavation or trenching to allow for the location of existing underground utilities by their representatives (RCW 19.122.030). Contact the appropriate utility if conflicts occur.

E. METER ROOMS

1. A minimum of seven or more metered services are required before a meter room will be allowed. ***At least seven active meters must be set and the required lockset must be installed BEFORE the building will be energized.***

2. Permanent labeling of service identification is required. Refer to Section 2-E and 5-E.

3. When a metering room is requested, ***a floor plan shall be submitted to the District for approval in the design stage and prior to any construction or wiring*** (WAC 296-46B-230).

4. The meter room shall be dedicated and secured for electrical equipment and never used for storage.

5. The meter room shall not be installed above or below the ground level of the building and shall be accessible through a single exterior door on the exterior lines of the building.

6. Safe access must be provided to the exterior door without having to enter or go through such areas as parking garages, hallways, breezeways, stairways or other such interior building lines.

7. The only access to the Meter Room shall be from the exterior ground level lines of the building via a minimum 2'8" x 6'8" solid core door installed with a heavy duty BEST knobset (***Series #83K7D4D_ 626 SPN, or Series #93K7D15D _ 626LM***) from BEST Access Systems. ***The use of a key box is not acceptable***. In the event a panic bar device and/or a door closure is installed a heavy duty panic bar exit device (***Precision No. 4R0FL5103-603, 703A or 808A trim***) and heavy duty automatic door closure (***Stanley No. D-4550- Std.***) is required. Panic bar and automatic door closures from alternate manufacturers are not acceptable.The locking system shall be furnished and keyed with an "***SP***" tumbler series core which will accept the District's master key. The locking system shall not allow common access to unauthorized individuals. For lock information contact:

   Contract Hardware, Inc
   Attention: Lynne Hufstedler
   12100 NE 195th St. Suite 250
   Bothell, WA 98011
   Phone: 1-206-298-4770 Ext.109
   Fax: 1-206-298-4777

8. The owner and his/her agents and/or the homeowners association of the building shall be responsible to install, retain and maintain the District's required BEST knobset and passage key system for the life of the service to the premises or the electrical service to the building will be subject to disconnection.

9. The customer/owner shall furnish and install and maintain a permanent sign on the exterior door stating "**Electrical Room**" and provide building identification in multiple unit complexes.

G. Solar Net Meter Generation:

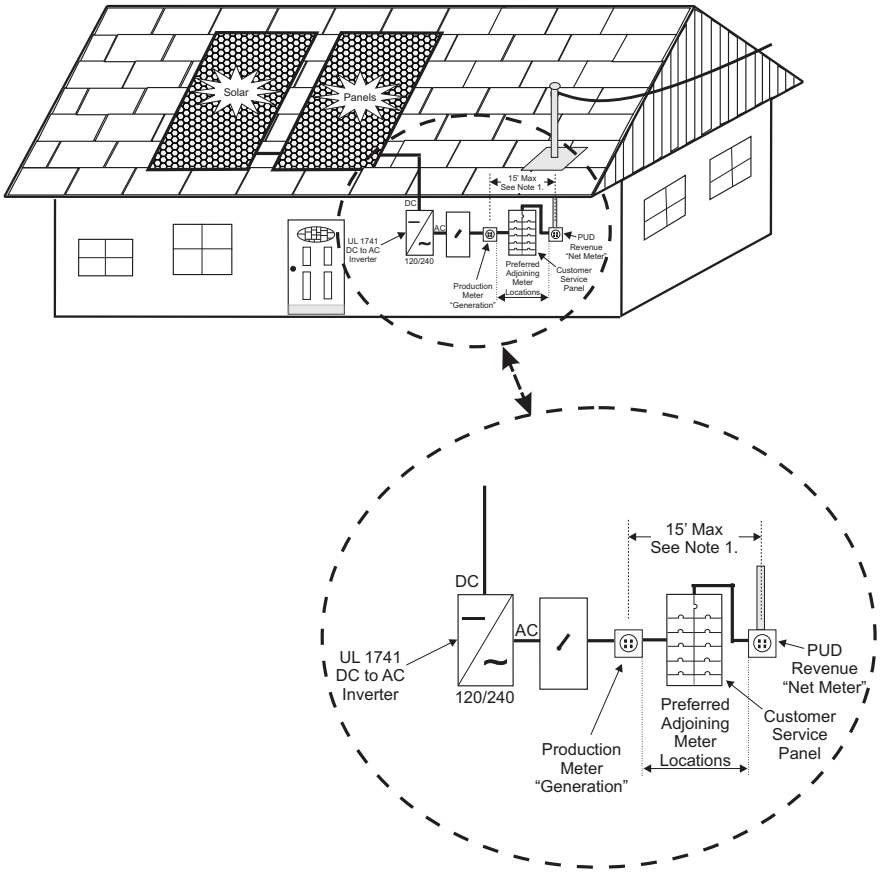
Installation of Solar Generation Production Metering must comply with the requirements in the District's Electrical Service Requirements Manual (ESR) as well as the requirements of the local electrical jurisdiction and the State of Washington.

Meters shall be permanently labeled "Production Meter" and "Net Meter" in compliance with ESR 5.F. Service Identification/Meter Labeling.

Preferred location of meters shall be adjoining as shown on the figure below when possible. If adjoining meter locations are not possible meters shall be in clear view with unobstructed safe access of each other.

Contact the District's Energy Services Department for further information.

Typical net metered solar installation 1Ø 25 kW or Less



Notes:

1. Preferred location for District revenue meter is within 15' of production meter. Greater distances may be acceptable with prior District approval before installation.
2. Production meter is for the Washington State Renewable Energy Production Incentive.
3. A visible-open lockable disconnect switch is required for all systems 25kW and greater. This switch must be accessible at all times to District personnel.
   Single-phase 120/240 volt systems under 25kW metered with a self-contained meter do not require a visible disconnect switch.