TACOMA POWER
TACOMA PUBLIC UTILITIES

Customer Requirements
Customer-Owned
Primary Equipment

C-SV-3005

Any customer who qualifies for a rate requiring customer ownership of the primary distribution must coordinate any work on this system through the Assistant Systems Engineering Manager, Electrical Distribution. These additions and changes will then be reviewed by the appropriate engineers.

ACCEPTABLE EQUIPMENT:
All equipment used must be of high quality and meet all applicable standards and codes. Systems that are to be maintained by Tacoma Power must use equipment which is compatible with standard Tacoma Power equipment.

DISTRIBUTION SYSTEM:
Only high quality cable shall be used with approved connectors, splices and terminations. If metallic ducts are installed, only power cable shall be used, all ducts must have a positive slope for drainage. Pole risers must be constructed according to Tacoma Power standards.

VAULT:
The layout of equipment in a vault should have uppermost in mind the safety of any personnel who may enter the vault. With this consideration, the transformers shall always be installed with their high voltage bushings turned away from any personnel access, i.e., the secondary bushing should point out into the room and the primary bushing shall be located near the back wall of the vault.

The conduit for the primary cable shall enter the vault in one of the two back corners of the vault. With this arrangement, the primary cable can go directly to cutouts, disconnects, or fuse mounts, located on the back wall above the transformers. Cables can then be run directly from these devices to the transformers. Exact placement of the disconnects depends on the height of the transformers and vault ceiling height.

Another major consideration for personnel safety is the vault grounding system. This system shall consist of at least two (2) 8-foot ground rods located in opposite corners of the vault. The ground rods shall be interconnected with bare stranded 2/0 or 4/0 copper wire. This wire shall be secured to the walls six inches (6") above floor level, and extend along at least three of the four walls, excluding the doorway. All metallic objects installed in the vault shall be attached to a ground system. This includes switchgear cabinets, messenger cables, transformer cases, conduits, bus duct cases and the stress cone grounds. In addition, the incoming system ground and the star points of the transformer shall be connected to the vault ground unless the transformer secondaries are delta connected, in which case the primary star point should be left floating. There must be only one ground path from the vault to the secondary equipment. This means that secondary conduits or bus ducts which enter the vault must have a ground which is connected to the building ground, but not the vault ground system.

VAULT (Continued)

After the vault is energized, if it is to be accessible to personnel other than the Utility, the transformers must be provided with a group-operated means of disconnecting, (Washington State Electrical Construction Code, Part 3, Section 30-3008 and Section 31-310C). Any fuses installed in the vault must be enclosed, except for provisions for entrance and exit of the cables, (Washington State Electrical Construction Code, Part 3, Section 32-322A). -

Pulling eyes are normally installed in the ceiling above the primary conduit or on the wall opposite the primary conduit. These are used to install the primary cable and therefore, additional eyes may need to be installed for mounting the sheaves need to reach the truck winch.

Messenger cables are installed near the ceiling to facilitate cable routing. These cables must be well above any disconnects. Two (2) or three (3) cables extending across the back of the vault on 10-inch centers is usually sufficient. The primary cable is attached to the messenger cable with fire resistant glass tape in several places. The primary cable is then wrapped with arc-proof tape along its entire exposed length and secured by additional glass tape.

Sources

Tacoma Power standard B-UG-407/D5.4000

References

Equipment	Standard
Transformer Pad	C-UG-1400 C-UG-1700
Conduit Risers	A-UG-1000 A-UG-1001 A-UG-1002 A-UG-1003
Arc and Fire Proofing of Power Cables	W-UG-0010
Transformer Service Vault	C-SV-3000