

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

**Dockets UE-170033 and UG-170034
Puget Sound Energy
2017 General Rate Case**

WUTC STAFF DATA REQUEST NO. 103

WUTC STAFF DATA REQUEST NO. 103:

RE: Schedule 40

Please provide a detailed narrative discussing the process, both historical and current, of PSE's engineering group in updating and analyzing Schedule 40.

Response:

Puget Sound Energy ("PSE") offers the following narrative, which describes generally the complexities faced by its engineering group in originally developing the circuit data supporting Schedule 40 and how the group's work has evolved over time.

The process of analyzing costs associated with Schedule 40 starts with determining the specific assets that serve a specific customer. In 2005, when PSE first developed Schedule 40, it took its engineers a couple of months to manually measure and document the overhead feeder conductors, underground feeder conductors and the underground 1/0 conductors for each campus. PSE's engineers used paper maps and scaled all of the feeder lengths and configurations manually for each of the circuits. The circuit lengths with conductor sizes were fairly easy to track for the first few years as not many circuit changes took place. In 2012 and 2013, PSE implemented a geographic information system for the maps which made the measurement step more effective and the ability to track the changes easier.

To determine the circuit costs, PSE uses an average cost per foot for the different types of conductors along the respective circuits. The cost of individual higher cost specific assets such as padmount switches and pull vaults are added based on the specific circuit by cost per device. These calculations were provided for each customer in the Confidential Workpapers supporting Exhibit No. ____ (JAP-15) to the Prefiled Direct Testimony of Jon A. Piliaris in the file titled "JAP-15 WP Sch 40 Rate Design Feeder Cost Studies.xls."

The cost of trenching and restoration must also be accounted for. Prior to 1990, trenching and restoration were included as part of the cost of providing service to new

PSE customers and as a result PSE's engineers could not determine the proportionate cost of trenching and restoration in the various years of installation. Since 1990, customers requesting new service are required to pay the full cost of trenching and restoration and these costs are included. For system projects PSE calculates the total trenching and restoration costs for all of the circuits on a system project and then proportionally allocates costs between Schedule 40 and non-Schedule 40 load and future conduit runs based upon the number and length of each of the circuitry in those categories.

The year of installation must also be determined as the cost of the asset is calculated from present year cost estimates and then valued back to the installation year as described in the Prefiled Direct Testimony of Jon A. Piliaris, Exhibit No. ____ (JAP-1T). In 2005 for the initial Schedule 40 customers, PSE used an average installation year for many of the sections of existing circuits because they were made up of conductors installed over a period of twenty years. For any newer circuit sections added to the Schedule 40, the actual installation year is used for the calculation.

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WUTC STAFF DATA REQUEST NO. 104

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RE: Schedule 40

Please provide a detailed narrative discussing the transformer charge in Schedule 40.

Response:

The objective of the transformer charge portion of the Schedule 40 Campus customer specific distribution charge is to capture the distribution transformer costs assigned to each campus. The calculation of the transformer charge can be found at pages 5 and 6 of the JAP-15 WP Sch 40 Rate Design Workpapers ("Sch 40 WP"). (Note: a revised copy of the Sch 40 WP is provided as Attachment A to Puget Sound Energy's ("PSE") Response to Staff Data Request No. 101.)

Attached as Attachment A to PSE's Response to WUTC Staff Data Request No. 104 is an MS Excel spreadsheet that calculates monthly lease charges for various types and sizes of transformers that PSE may lease to customers that do not own their own transformers, but are required to have if they are to be served on primary voltage service. This study was relied on to compute transformer costs for each campus.

As part of the engineering study performed for each Schedule 40 campus, distribution engineers identify the number, type and size of each transformer owned by PSE at the customer's campus.

Monthly equipment lease charges from Attachment A were identified for each transformer that is unique to its type (i.e., underground, padmount or overhead) and kVa size. The monthly lease amount was then multiplied by twelve months to arrive at an annual charge. The product of the annual charge and transformer inventory is then summed to arrive at the annual transformer revenue to be collected for the campus (Sch 40 WP, Line 18).

Annual billed kW demand is then multiplied by the campus' unique coincident demand factor (Sch 40 WP, Lines 20-27) to derive that campus' unique annual coincident kW demand.

The annual transformer revenue is divided by the annual coincident kW demand to calculate the transformer charge on a \$ per kW basis (Sch 40 WP, Line 29).

This \$ per kW transformer charge is included with the circuit and substation \$ per kW charges to comprise the total Schedule 40 Distribution Charge for each specific Campus served on Schedule 40.