

**EXHIBIT NO. ___(SML-6)
DOCKET NO. UE-11___/UG-11___
2011 PSE GENERAL RATE CASE
WITNESS: SUSAN MCLAIN**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

**Docket No. UE-11___
Docket No. UG-11___**

**FIFTH EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF
SUSAN MCLAIN
ON BEHALF OF PUGET SOUND ENERGY, INC.**

JUNE 13, 2011

Sedro Woolley—Horse Ranch 230 kV Transmission Line

1. How Municipality Requirements Have Increased PSE's Electric Construction Costs

- 1.1 *Figure 5-1* shows a PSE transmission line that needed to be upgraded. The transmission line crosses the Stillaguamish River in unincorporated Snohomish County and was built of H-frame wood pole construction.



- 1.1.1 To cross the Stillaguamish River, PSE initially intended to use a design with three 90-foot steel poles having the poles directly embedded in the ground. It was determined that the line crosses the Channel Migration Zone of the Stillaguamish River.
- 1.1.2 Snohomish County required the Company to complete a Channel Migration Zone Analysis and a 100-Year Scour Analysis of the portion of the Stillaguamish River where this project would be constructed.

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- 1.2 Excerpts from the Snohomish County Construction Code are included below.
 - 1.2.1 Chapter 30.62B.330: Erosion hazard areas—Channel Migration Zones

“The department may require a channel migration zone study when a development activity or action requiring a project permit is proposed to occur in areas where evidence indicates channel migration is likely...”
 - 1.2.2 Chapter 30.65: Special Flood Hazard Areas

“The purpose of this chapter is to protect the public health, safety and welfare in those areas subject to periodic inundation due to flooding, and to minimize losses due to flood conditions...”
- 1.3 The studies showed that the transmission line runs through a flood plain and would need to be constructed in accordance with relevant County flood hazard requirements, including the compliance requirements set forth in guidelines issued by the Federal Emergency Management Agency (“FEMA”) for construction in a flood plain.
 - 1.3.1 In order to comply with the jurisdictional code, the poles needed to be able to withstand the erosion of 23 feet of terra firma in the event of a flood, and still have an adequate foundation to remain standing.
 - 1.3.2 The flood hazard requirements initially required the Company to construct two 145-foot poles, each with an 80-foot foundation adjacent to the existing 75-foot H-frame structures.
 - 1.3.3 The PSE planning team believed that the 145-foot pole design would be more difficult to maintain, was not aesthetically pleasing, and would be rejected by nearby landowners, so PSE proposed an alternate design to the County. The County ultimately approved the use of two 120-foot double circuit steel poles installed on 70-foot and 60-foot foundations.

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- 1.4 *Figure 5-2* shows a foundation cage that was inserted into the ground to house the concrete foundation for one of the 120-foot steel double circuit poles.



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- 1.5 *Figure 5-3* shows the poles in the completed line segment as it crosses the Stillaguamish River.

