

APPENDIX C

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PROJECT BACKGROUND AND DESCRIPTION OF FACILITIES

This proceeding relates to two proposed facilities. The first proposed facility is the Coopersburg #1 and #2 138/69 kV Transmission Tap Line. The proposed Tap Line is to be located in Upper Saucon Township, Lehigh County and in Springfield and Richland Townships, Bucks County. Initially, both circuits will be operated at 69 kV. Operations will be converted to 138 kV operation when required to meet future loads. The proposed line is double circuit line and is approximately 7.09 miles long. The new line will connect PPL Electric's 69-12 kV Substation located near Coopersburg in Upper Saucon Township with the 69-12 kV Substation in Richland Township that serves the Borough of Quakertown. Summary, PPL EU Ex. 1.

The construction of the Tap Line will required installation of approximately 72 structures, which will average 85 feet in height. Average spans between conductors will be approximately 525 feet. Most structures will be single pole steel structures with steel upswept conductor support arms. Some two-pole structures may be required where the Tap Line changes direction. Similar structures are shown in Figures 1 and 2 to Exhibit d to PPL EU Ex. 1. The two circuits will require a total of six conductors. The conductors will be 556.5 KCMIL stranding ACSR. IN addition, the were be a groundwire of 0.559-inch OPGW with 36 single mode fibers. Page 1 of Exhibit D to PPL EU Ex. 1.

The proposed Tap Line will replace an existing 69 kV transmission line that was constructed in approximately 1930 – more than 75 years ago. Summary, PPL EU Ex. 1. The present 69 kV transmission line runs along Rout 309 for a substantial portion of its length and then through the Route 309 Woods. It is mounted on wood poles.

The second facility that is the subject of these proceedings is needed to protect control equipment at the proposed Substation at Hickon Road, in Springfield Township, Bucks County. Substations must include critical control equipment, including primarily switches, relay and control equipment, and SCADA (Supervisory Control and Data Acquisition), to control the flow of electricity into, within and from the substation. In order to function properly, most of this equipment must be protected from the elements. The purpose of the proposed control equipment building at the Substation is to protect critical control equipment from the elements so that the equipment, and the entire substation, can function properly.

The building will be approximately 40 feet by 60 feet and will be constructed on a concrete slab. The exterior walls will be constructed of corrugated aluminum. There will be minimal space heating and cooling equipment for the building. Such equipment will be installed only for the purpose of keeping the temperature inside the building within limits tolerated by the control equipment. The building will not be intended for occupancy; there will be no supply of water or sanitary facilities. The substation will be surrounded by a high fence to prevent entry by unauthorized persons. Access to the substation, including the control equipment building, must be limited because the high voltage at which the substation will operate presents dangers to unqualified persons. The control equipment building will be contained within the fenced perimeter of the substation.

The control equipment building is required for proper protection and operation of the electrical equipment at the substation. Public safety is compromised if the control equipment is not functional. System damage can occur due to system disturbances. If a fault occurs on a line and the protection equipment fails to clear the fault, the line could potentially burn down causing a public hazard. Nonfunctional protective control equipment can also result in excessive and

longer term interruptions to customers. PPL Electric cannot place a line in service without the proper relay protection. PPL EU St. 12, pp. 8-9.

The Coopersburg Tap Project, including the Tap Line and the substation at Hickon Road, are required to meet increasing load in the area. Coopersburg and Quakertown are surrounded by significant areas of suburban development, much of it built in the last 15 years. Intense development also occurs in a “strip” fashion along Route 309, the four-lane highway which connects Coopersburg and Quakertown. New businesses have been built and additional ones are being added. Route 309 is also a major thoroughfare which connects the City of Philadelphia with Allentown and Bethlehem. Additionally, there has been continuing development near the Quakertown Exit of the Northeast Extension of the PA Turnpike, which is also part of the Southern Lehigh Region. Page 2 to Exhibit B of PPL EU Ex. 1; PPL EU St. 1-R, pp. 5-6.