

***PJM Generator Interconnection Request  
Queue #W2-013  
Branchburg-Elroy 500kV  
Feasibility/Impact Study Report***

**October 2010  
#615763**

# **W2-013 Branchburg-Elroy 500kV Feasibility Study**

## **General**

H-P Energy Resources, L.L.C. (H-P) has requested increasing the emergency rating on the Branchburg terminal of the Branchburg-Elroy 500kV 5017 circuit from 2983 MVA to the conductor rating of 3734 MVA by upgrading terminal equipment at Branchburg and Elroy stations. H-P has requested this upgrade be in place by June 1, 2012.

The intent of the Impact study is to determine system reinforcements and associated costs and construction time estimates required to facilitate the addition of the new generating plant to the transmission system. The reinforcements include the direct connection of the generator to the system and any network upgrades necessary to maintain the reliability of the transmission system.

## **Direct Connection**

Not Applicable

## **Network Upgrades**

The following modifications need to be made at the Branchburg and Elroy stations to increase the emergency rating of the 5017 line to 3734 MVA.

### **Branchburg Terminal (PSE&G) (Network Upgrade # n2076.1)**

The rating upgrade requires replacement of the following.

- 2- 500kV circuit breakers
- 4 – Circuit breaker disconnect switches
- 1 – Line disconnect switch
- 1 – Wave Trap
- Circuit Breaker Current Transformers

The estimated cost for the replacement is **\$3,750,000**. It will require 18 months to engineer, procure and construct the replacement.

### **Elroy Terminal (PECO) (Network Upgrade # n2076.2)**

The rating upgrade requires replacement of the following.

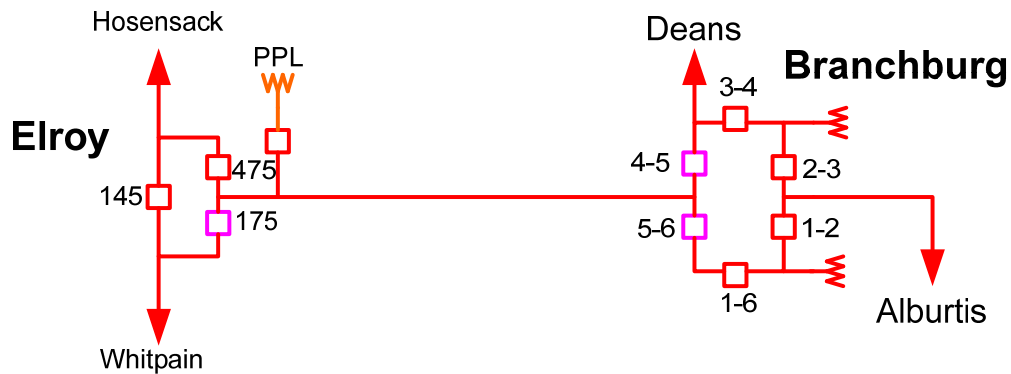
One (1) 500kV Circuit Breaker  
One (1) Wave Trap

The estimated cost for the replacement is **\$1,000,000**. It will require 8 months to engineer, procure and construct the replacement.

### Elroy Terminal (PPL)

PPL EU owns a 300 mva transformer tapped off the Branchburg-Elroy 500 kV 5017 line to supply the PP&L portion of the Elroy station (serves regional load in the Buxmont area - not a 500 kV transmission path). Because this connection is transformer limited, it will never be able to be increased to 3734 mva and should never have to be. That transformer path is not intended to nor should it be required to support that magnitude of load. Therefore, PPL EU will have **\$0** cost for this project.

## W2-013 Branchburg-Elroy 500kV



### Cost

To increase the rating of the Branchburg-Elroy 500kV 5017 circuit H-P will be responsible for 100% of the total cost of **\$4,750,000**.