Design and Construction of a New District Energy System in Pittsburgh, PA
Pittsburgh District Energy Systems
Final Project Scope

Uptown Energy Center
35,000 sq.ft.
150 KPH Steam Capacity
9250 Ton Chilled Water Capacity
7500 kW Emergency Power Capacity

Electrical & Communications Distribution:
- 1300 Trench Feet
- 20 Way Duct Bank
- 2 900 Amp Feeders
- 2 Fiber

Chilled Water Distribution:
- 1000 Trench Feet - 30” HPDE
- 2000 Trench Feet - 24:HDPE

Steam Distribution:
- 1900 Trench Feet
- 16” Steam
- 8” Condensate
- 2” High pressure trap return

Heat Exchanger Building

UPMC Mercy Hospital Campus

UPMC Vision & Rehabilitation Institute
Plant Equipment and Systems – Steam

3 – 50 KPPH Cleaver Brooks Low NOX Gas/Oil Watertube Boilers w/ FGR & Economizers

1 – 100 KPPH, 2500 Gallon Tray Deareating Feedwater Heater

1 – 2200 Gallon Feedwater/Condensate Storage Tank

3 – 130 GPM Fixed Speed Feedwater Pumps

2 – 311 GPM Fixed Speed Condensate Transfer Pumps

3 – 235 GPM Water Softeners
Plant Equipment and Systems – Chilled Water

1 – 2750 Ton York 4.16KV Dual Compressor Variable Frequency Drive Water Chiller

1 – 2750 Ton York 4.16KV Dual Compressor Fixed Speed Water Chiller with Hot Gas Bypass

1 – 2750 Ton York 4.16KV Dual Compressor Fixed Speed Water Chiller

1 – 3 Cell 8250 Ton Field Erected Fiberglass with Stainless Pan Cooling Tower, 1 Variable Frequency Drive Fan per Cell

Variable Primary Chilled Water Pumping System with three 5,500 gpm VFD pumps

3 - 5,500 gpm VFD condenser water Pump
Plant Equipment and Systems – Emergency Power & Electrical

3 - 2500 kW Tier IV Diesel Generators
2 – 7500 KVA 32.6/4.16 KV Utility Transformers
1 – Double Ended 4.16 KV Substation
5 – 480 V Motor Control Centers
Plant Equipment and Systems – Distributed Control System

- ASCO Controls & HMI for Emergency Power System
- Emerson Delta V Control System BOP
- 3 Pair Redundant Controllers
- 2 Redundant Dual Monitor Operator Workstations.
- Remote IO at UPMC
Plant Construction Pictures

March 2017

April 2017

June 2017

July 2017

August 2017

September 2017

Clearway Energy
Distribution Construction Pictures

March 2017

April 2017

May 2017

July 2017

August 2017

September 2017

Clearway Energy
Distribution Construction Pictures

October 2017

November 2017

December 2017

January 2018

February 2018

May 2018