



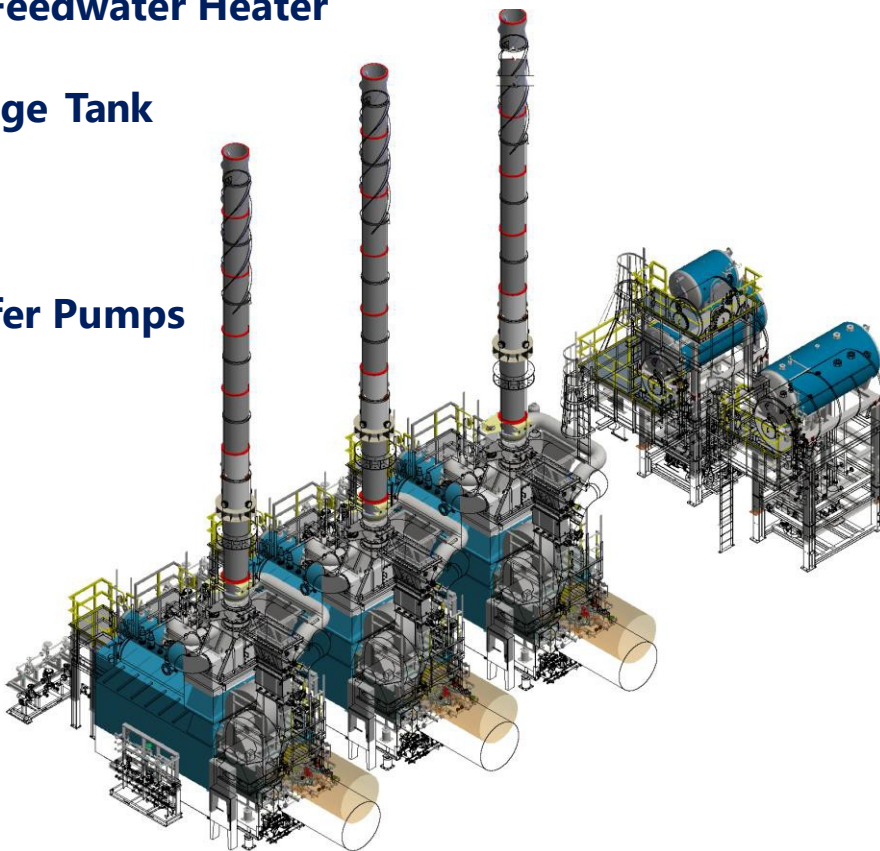
Design and Construction of a New District Energy System in Pittsburgh, PA

Pittsburgh District Energy Systems



Final Project Scope





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 w/Hot Gas

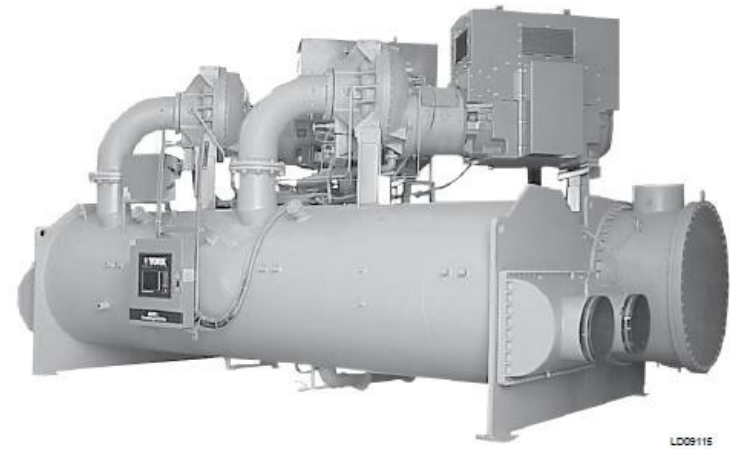
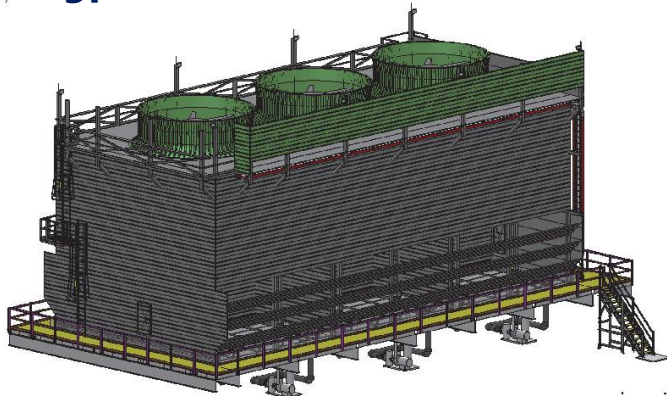
Bypass

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

1 – 3 Cell 8250 Ton Field Erected Fiberglass w/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



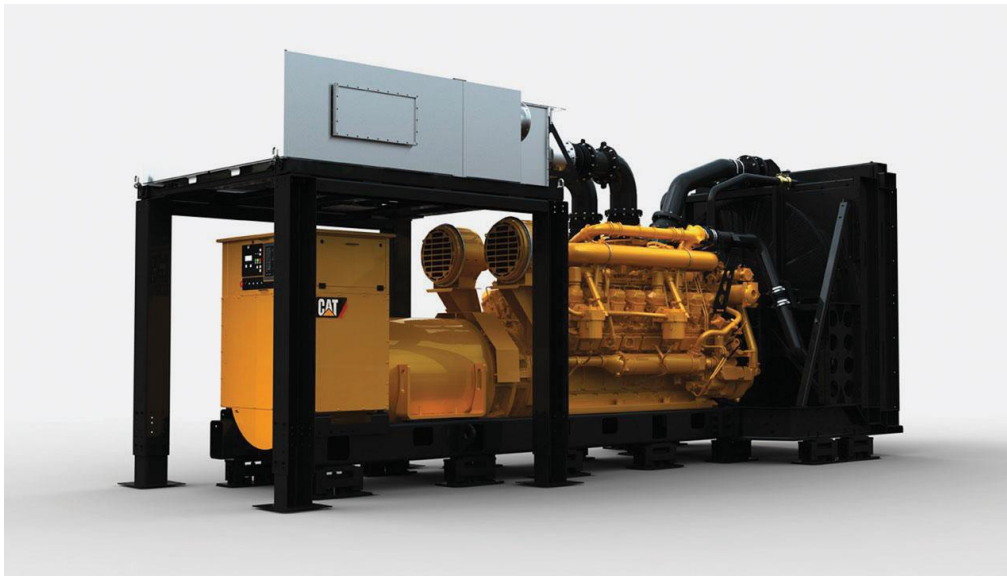
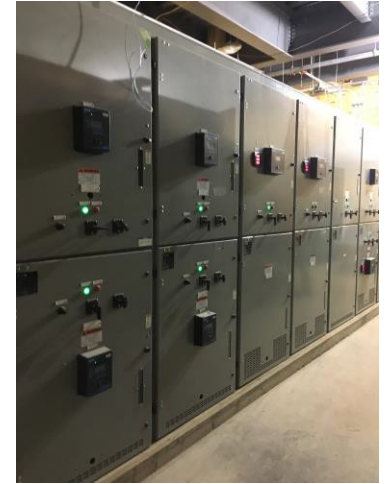
Plant Equipment and Systems – Emergency Power & Electrical

3- 2500 kW Tier IV Diesel Generators

2 – 7500 KVA 32.6/4.16 KV Utility Transformers

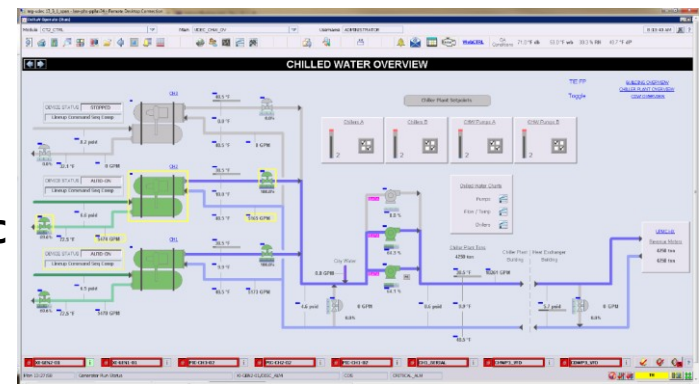
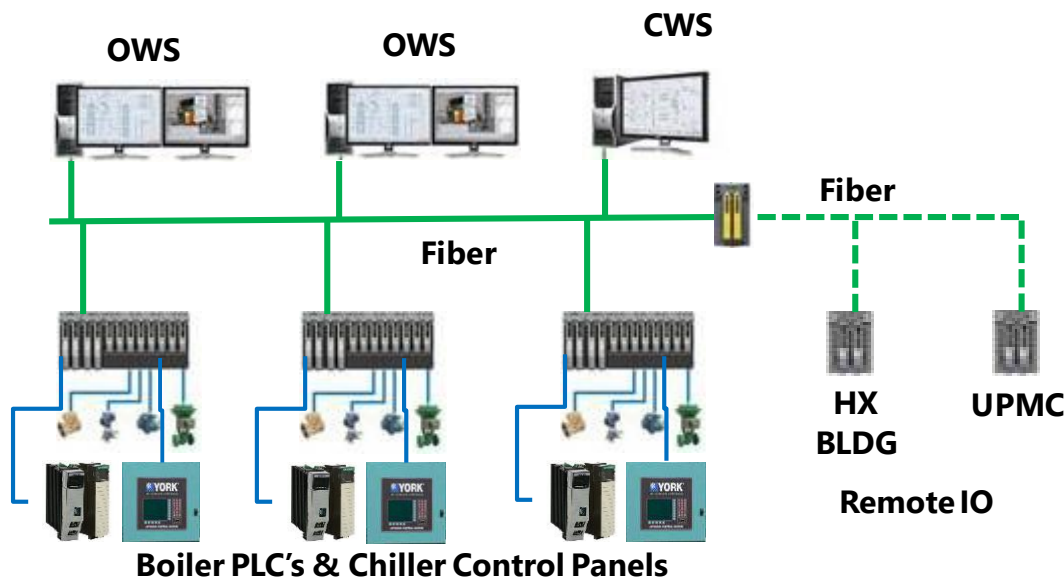
1 – Double Ended 4.16 KV Substation

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

Plant Construction Pictures



October 2017



December 2017



January 2018



March 2018



April 2018



May 2018

Distribution Construction Pictures



March 2017



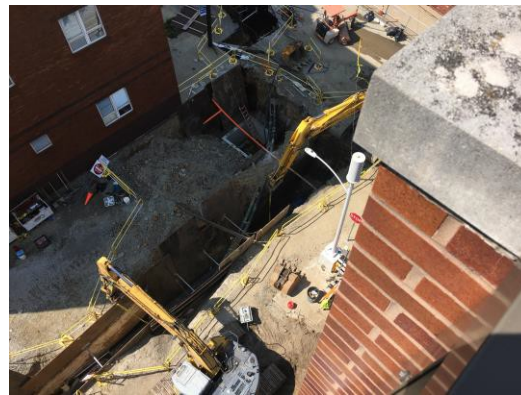
April 2017



May 2017



July 2017



August 2017



September 2017



Distribution Construction Pictures



October 2017



November 2017



December 2017



January 2018



February 2018



May 2018