

WVU Medicine Southeast Tower Addition

DESIGN / CONSTRUCTION TIMELINE:

July 2012 – June 2017

CLIENT:

IKM Architects

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CEA served as the MEP/FP engineers on the 320,000 sq. ft. tower addition to the existing hospital, the new building was 10 stories in height. Two new 1000-ton chillers were added in the tower building and connected to the existing chiller plant by extending the existing primary chilled water loop to include the new chillers. This brought the total system capacity up to 5,200 tons. New 32,500 cfm air handling units were installed on each floor and supplied the air to the VAV boxes and hot water reheat. New boilers and emergency generators were installed in a new Central Utility building. Three 350 HP steam boilers and two 1,500 KW generators were installed in this building. Plumbing systems consisted of new medical gas piping systems, medical air compressors, medical vacuum pumps, connection to the existing main bulk oxygen system, nitrogen, nitrous oxide, and carbon dioxide supplied from new tank manifold assemblies. Domestic water was supplied from a new connection to the city water main and a series of water filters, water softeners, and booster pumps distribute water throughout the building.

The Normal Power distribution was upgraded and consisted of the removal of two (2) outdoor 23kV – 480Y/277V Substations and reconnection of the 23kV feeder breakers to serve two (2) new 2500kVA, double-ended, 23kV – 480Y/277V indoor substations to serve the new 10-story Southeast Tower and Chillers. Power distribution with-in the SE Tower consisted of multiple switchboards, panels and transformers throughout the facility.

The Emergency Power consisted of furnishing two (2) new 1500kW Gen Sets and integrating them with two (2) existing 800kW Gen Sets. New Paralleling Switchgear and multiple Automatic Transfer Switches were installed to provide an engineered design for Life Safety, Critical and Equipment Branch operations. The existing paralleling switchgear was modified to be used as an “Emergency-Only” switchboard, saving much time and cost by maintaining all of the existing emergency distribution as-is.

