



Our Work

Project/Client Name: DST - Central Utility Facilities - Cooling Tower Replacement

Location: Kansas City, MO

End Date: March 2013

Role: General Contractor, Design & Constructability Analysis

As General Contractor, **SITESPAN** constructed a new 2,000 ton, four cell, stand alone, reinforced concrete structural cooling tower consisting of over 1,000 cubic yards of concrete and 50 tons of reinforcing steel. Also, containing Marley cooling tower components, the Marley components consisted of the pumps, fans, fill and spray system. The concrete mix used in the construction of the cooling tower is a Type 5 Architectural white concrete mix. This new cooling tower replaces an existing 800 ton cooling tower, and was constructed, commissioned and validated for two weeks prior to demolishing the old tower. The existing building automation and cooling tower controls were modified to fit the new, larger tower. The cooling tower structure included a self contained pump house for the vertical turbine pumps, basket strainer, and sediment removal separator. The tower also included an electrical room which housed the Variable Frequency Drives, Motor Control Center, 600 amp Breaker, and miscellaneous transformers. The cooling tower structure was topped with a lightning dissipation array to match the remaining structures on the site.

With the connection of this new cooling tower to the Data Center's existing infrastructure, there were site and unforeseen conditions to accommodate during construction. The first special condition was penetrating the existing tornado resistant shell with the new 16" chilled water pipes. This was accomplished by tunneling under the foundations and slabs of the existing boiler and pump rooms to enter deep inside the existing building. This process and design was formulated in partnership with the design team of Bell Knott & Associates. To assure that these new critical systems would operate as intended, Stanley Consultants was hired as a third party pier reviewer under the General Construction contract.

