

TECH SPECS

NAP of the Capital Region: Power Capabilities

Overview

In January 2007, amid high demand from government and enterprise customers, Terremark Worldwide Inc. embarked on an ambitious plan to construct one of the most innovative datacenter projects in the world – the Network Access Point (NAP) of the Capital Region. Located in Culpeper, Virginia, 60 miles from the zero-mile marker near the White House, the NAP of the Capital Region (NCR) will provide state-of-the-art managed services, unparalleled security and connectivity, and guaranteed power availability for government and enterprise customers. The NCR is specifically designed to exceed Uptime Institute Tier III standards as a carrier-grade Federal data communications and hosting facility offering the ultimate in physical security.

Upon completion the campus will feature five independent datacenter structures and a secure office building. Each structure is a secure bunker set back 150 feet from the campus perimeter and built to standards for sensitive compartmented information facilities. Inside each datacenter a professional security staff maintains and operates sophisticated video surveillance systems, and secured areas for processing of staff, customers and visitors.

Power Capabilities

The campus will deliver power 100% of the time with no single point of failure from an array of electrical systems engineered to provide uninterrupted power. The facility can easily accommodate tomorrow's power requirements for high-density computing environments. With the ability to generate its own electricity, data center operations will continue uninterrupted in the event of a regional power grid failure.

Working in conjunction with Dominion Virginia Power and Rappahannock Electric Cooperative, the NCR will be supplied with the electrical power needed to serve the needs of Terremark's customers. As both government and enterprise customers locate their critical infrastructure in the NCR, Dominion has pledged to enhance the power systems serving the facilities, which will be supported by the regional nuclear power plant. Currently, Dominion is installing additional transmission lines and transformers at the two substations that will serve the facility. As time progresses, the NCR will have the ability to draw as much power as needed from the infrastructure feeding electricity to the campus.

In the event of a commercial power failure, the NCR will be equipped with 55 generators that can sustain its power requirements for up to seven days without refueling. These generators will be connected to more than 500,000 gallons of diesel fuel housed on the campus in environmentally safe containers.

The NAP of the Capital Region will provide its customers the flexibility to draw as much power per square foot as needed to maintain their critical IT infrastructure. Additionally, Terremark will operate innovative cooling systems throughout to maintain the proper environmental conditions within the datacenter. The datacenters will feature water-side free cooling systems, which will utilize the cold air from the outside to cool its chilled water supply, as well as a closely coupled cooling design that will deliver the cold air as closely as possible to the source of the heat.

Electrical Infrastructure

- 100% Service Level Agreement (SLA) on Power Availability.
- 100% SLA on Temperature Stability.
- 100% SLA on Humidity Stability.
- The campus is engineered to provide N+2 level of power distribution.
- Initial engineering provides for 120 to 180 watts/sq. ft with the ability to configure up to 400 watts/sq. ft
- Medium voltage commercial power backed up by 55 diesel generators.
- Diesel generator runtime in excess of seven days under an 85-90% load.
- NCR on Culpeper County's Critical Infrastructure Restoration list to ensure priority in refueling to extend the seven-day run time.
- Designed to Level 4 Tiered Infrastructure Maintenance Standard (TIMS) allowing for performance trending, capacity analysis, alerts, automated response and reporting.

Features	NCR June 2008	NCR Fully Built Out
Square footage - overall	50,000	250,000
Square footage - raised floor	47,000	235,000
Utility power	6MW	30MW
Std watts/sq. ft	160	160
Custom watts/sq. ft	Unlimited	Unlimited
Generators	11	55
Fuel (Gallons)	60,000	520,000
Fuel (Days)	7	7