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Via PLUS

Leslie Johnson, Zoning Administrator
Zoning Administration Division
Fairfax County Department of Planning and Development
12055 Government Center Parkway, Suite 800
Fairfax, Virginia 22035

Re: Request for Use Determination - Fuel Cells Associated with a Data Center
Fairfax County Tax Map Reference: 44-1 ((4)) 31B1

Dear Ms. Johnson:

This office represents T-5 Data Centers (the "Applicant"), that is the contract purchaser of property located at in the northwest quadrant of the intersection of Stonecroft Boulevard and Lee Road, identified on the Fairfax County Tax Map as parcel 44-1 ((4)) 31B1 (the "Subject Property"). Please accept this letter as a request to confirm that fuel cells to provide on-site electricity will be considered a utility facility, light, that is accessory to the principal data center use on the Subject Property under the Fairfax County Zoning Ordinance ("Zoning Ordinance").

I. Overview of the Subject Property and Request

The Subject Property is approximately 18.64 acres and is zoned to the I-3, Light Intensity Industrial District. The Subject Property is within the Airport Noise Impact and Water Supply Protection Overlay Districts. The Subject Property and surrounding parcels are within Westfields International Center at Dulles.

Pursuant to the Zoning Ordinance, a data center exceeding 80,000 square feet of gross floor area is allowed in the I-3 District only with the approval of a special exception. The Applicant intends to seek a special exception to construct a data center consisting of approximately 312,000 square feet of gross floor area on the Subject Property. The proposed data center will utilize a combination of three power sources for its operations: (1) on-site fuel cells that provide electricity through conversion of natural gas supplied by a proximate natural gas pipeline; (2) electricity from the power grid provided by Dominion Energy, and (3) traditional diesel generators that will

provide emergency electrical power to the data center only when other power sources are not available.

To date, Fairfax County has not evaluated a data center or other facility proposing to use on-site fuel cells to address its energy needs.

II. Fuel Cell Energy Generation Technology

Fuel cells are not a new technology and have been utilized for smaller scale projects for several decades. The efficiency of fuel cells has increased during recent years making them a viable option to provide electricity to larger facilities such as data centers or manufacturing facilities. Many data centers around the country are now utilizing fuel cells to supplement their electricity needs, especially in areas where the electricity grid does not have adequate supply to serve these facilities.

In some aspects, fuel cells are similar to on-site natural gas or diesel backup generators, which are in use by many data centers in Fairfax County and across the Country. Like backup generators, fuel cells can be co-located with a data center for on-site electricity generation and use a fuel source (in this case, natural gas) to generate electricity which is then used to power the data center.

However, different from generators, fuel cells convert natural gas into electric energy through a chemical reaction that does not combust the natural gas like a typical natural gas generator. The traditional combustion process produces electricity along with air pollutants as a by-product (known as "criteria pollutants"). Because fuel cells generate energy without combustion, they generate nearly zero criteria pollutants, making them environmentally superior to other electricity generation options with respect to air pollution. The primary by-product of the fuel cell energy production process is steam comprised of water vapor, carbon dioxide, and heat. The carbon dioxide component of the steam produced by fuel cells is approximately 37% less carbon dioxide than the equivalent energy sourced from the typical United States electricity grid's baseload.

The heat produced by the fuel cells is minimal enough in quantity and temperature that it naturally dissipates to ambient temperature after mixing with the air. Chillers or other cooling technologies are not needed to manage fuel cell steam heat. Aside from the initial installation and annual maintenance cleaning, fuel cells use little to no water. Fuel cells operate with a low sound profile (approximately 62 dBA at a distance of 30 feet) and typically do not require noise mitigation.

Fuel cells are not batteries or battery energy storage system ("BESS") facilities because they convert fuel to electricity, rather than storing electricity. If a fuel cell is disconnected from its fuel source (in this case, natural gas), it cannot produce electricity. A battery, conversely, stores energy and can produce electricity without a direct fuel connection. Fuel cells do not utilize lithium-ion technology.

III. Proposed Fuel Cells at the Subject Property

The Applicant intends to use fuel cells to provide 60 MW of electric power for the data center development on the Subject Property. All of the energy provided by the fuel cells will be utilized on-site by the data center and the Applicant does not plan to provide electricity to other facilities or feed electricity back into the power grid. The electricity provided by the fuel cells is expected to be sufficient to power the data center base loads. For higher load periods, electrical power supplied by Dominion Energy will be utilized in addition to the fuel cells. In an emergency situation where the fuel cells and/or the Dominion grid is unable to provide the contracted amount of electricity, backup power will be supplied by traditional diesel generators that are also located on-site.

As shown in the conceptual site layout attached as **Exhibit A**, the fuel cells will be located outdoors in a fuel cell yard that will be screened from Stonecroft Boulevard and adjacent properties with screening wall and landscaping. The fuel cells will be less than 29 feet height, while the data center building will be approximately 75 feet in height. The fuel cells will occupy an approximately 290-foot by 285-foot area comprising 82,650 square foot area of the Subject Property, while the data center building will comprise approximately 312,000 of gross floor area.

The fuel cells will use natural gas as their fuel source which will be supplied by a pipeline connecting to an existing distribution gas pipeline approximately 4,000 feet from the Subject Property. No natural gas for the fuel cells will be stored at the Subject Property.

IV. The Proposed Fuel Cells are a Utility Facility, Light Use

A utility facility, light use is a facility related to distribution or collection of utility products or services that needs to be located near the utility customer. The proposed fuel cells will supply a limited amount of electricity to the data center, will be dedicated solely to the data center use, will not serve off-site customers, and will have low impact operations. These features make the fuel cells most similar to an electrical substation use under the Zoning Ordinance, which is considered a utility facility, light. A utility facility, light is a permitted use in the I-3 District.

V. The Proposed Fuel Cells are Accessory to the Principal Data Center Use

Under Section 9103.7 of the Zoning Ordinance, an accessory use is defined as a use that is:

- Is clearly subordinate to, customarily found in association with, and serves a principal use;
- Is subordinate in purpose, area, or extent to the principal use served;
- Contributes to the comfort, convenience, or necessity of the occupants, business enterprise, or industrial operation within the principal use served; and
- Is located on the same lot as the principal use.

The fuel cells that will supply electricity to the Applicant's proposed data center are an accessory use based on the Zoning Ordinance definition.

The fuel cells are proposed as part of the development only because they will serve the principal data center use by providing electricity necessary to operate the data center.
On-site generators and electrical substations that produce electricity only for on-site use are commonly co-located with data centers. Fuel cells, which are an alternative technology to provide on-site electricity, emit near zero criteria air pollutants, have low water use and quiet operations, and are becoming increasingly common as on-site electricity generators for data centers.

The fuel cells are subordinate in purpose to the principal use of the data center on the Subject Property because they will only exist as part of the proposed development to provide electricity for the data center. The fuel cells are also subordinate in size and extent to the principal data center use. The fuel cells will be less than 29 feet height, while the data center building will be approximately 75 feet in height. The fuel cells comprise only approximately 82,650 square feet of area in an outdoor yard, while the data center will consist of approximately 312,000 square feet of gross floor area.

The fuel cells will contribute to the Applicant's operation of its data center business on the Subject Property by supplying necessary electrical power. With the existing constraints of Dominion Energy's power grid, additional on-site electricity generation is necessary for this proposal.

For the reasons described above, the fuel cells proposed for the Subject Property, which are an on-site electricity generation source and will be utilized solely to power the proposed data center, are a utility facility, light, and accessory use to the principal data center use proposed for the Subject Property.

Should you have any questions or require additional information, please do not hesitate to contact me. As always, I appreciate your consideration.

Very truly yours,

WALSH, COLUCCI, LUBELEY & WALSH, P.C.

Allison J. Reynolds

Attachment - Exhibit A – Conceptual Site Layout
cc: Timothy Bright
Lynne Strobel

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