

**Idylwood Substation  
Statement of Justification  
Special Exception Amendment**

December 22, 2016

**I. INTRODUCTION**

Pursuant to Section 9-014 of the Fairfax County Zoning Ordinance dated August 14, 1978, as amended (the "Ordinance"), the Virginia Electric and Power Company, d/b/a Dominion Virginia Power ("Dominion") hereby requests an amendment of its recently approved special exception to permit the addition of temporary equipment at its existing facility known as the Idylwood Substation. Idylwood Substation is identified as Tax Map Numbers 49-2-((1))-151 and 49-2-((12))-001A, and is addressed as 7701 and 7707 Shreve Road, respectively (the "Property"). The Property is located in the Providence District and is zoned R-3 (Residential 3 DU/AC).

**II. BACKGROUND**

The Property has been the site of an existing substation since 1947. It was originally approved for a substation use by the Board of Zoning Approvals on November 26, 1946 and received subsequent Special Permit approval in November 1962 for expansion of the site. Most recently, on May 12, 2015, the Board of Supervisors approved Special Exception 2014-PR-032, which permitted a complete remodel of the Idylwood Substation.

The Property totals 7.2 acres and is an integral station at the center of Dominion's northern region electrical grid. Idylwood is located at the intersection of two major transmission corridors and is both an electrical transmission hub and a major distribution substation. As explained in the most recently approved Special Exception, the planned work at Idylwood is vital. This station is over sixty years old and has undergone several expansions and piecemeal improvements since its original design. The old equipment is spread throughout the 7.2 acres, and the rebuild will upgrade and provide state-of-the art equipment, thus ensuring Dominion's ability to provide reliable electrical service to the surrounding area.

During the recent Special Exception application, Idylwood's rebuild was thoroughly described. It continues to be proposed in two phases. The first phase will involve construction of the new substation equipment toward the front of the property, closer to Shreve Road. Gas-insulated substation ("GIS") equipment will be used instead of typical air-insulated substation equipment. The end result will be a new and improved substation that is quieter, more efficient, and which will operate within a smaller footprint on the Property.

All work must take place while keeping the substation operational. Because Idylwood is at the center of Dominion's northern region electrical grid, it must continue to provide power for the service area. Only minimal pieces of the existing infrastructure will be out of service at any one time in order to meet power needs.

Once the new GIS equipment is installed, the second phase of construction will involve de-energizing and removing old substation equipment throughout the property. Once equipment removal is complete, Dominion will then install the wall and new landscape buffers,

which will provide improved screening and buffering to the site. The result will be a consolidated, state-of-the art substation that is quieter, more efficient, located within a smaller footprint, and which will now have improved screening and landscaping.

### **III. NEED FOR THE SPECIAL EXCEPTION AMENDMENT:**

Following the Special Exception approval, Dominion began its site plan process and completed the intricate task of creating a construction plan for the remodel of a major substation while, at the same time, keeping the substation operational. Dominion's most important task was to temporarily shift a portion of the power flow around the areas of the substation where construction would occur. Dominion's proposal for Idylwood is to place bus work during the construction period at an elevation of approximately 37 feet on the eastern side of the property, away from construction activity.

This "high bus" or "construction bus" is necessary to perform two critical electrical functions during construction. The first is to bring the transmission power source from the southern area of the station to the northern area in order to feed new distribution transformers for the community during construction. The second is to temporarily feed one of the existing transmission lines, which will allow for the relocation of that line from the center of the substation to a more westerly location out of the way of construction. When the new GIS equipment is installed later in the construction sequence, the equipment served by the construction bus will be connected directly to the GIS, and the high bus will be de-energized and removed.

The need for the temporary construction bus is similar to temporary infrastructure rearrangements during any construction project, such as relocated roadways, water lines, or sidewalks. Further, the temporary placement of a construction bus is similar to the temporary placement of construction equipment such as cranes or scaffolding.

This type of temporary, construction-related methods are not normally reviewed during the special exception process and, thus, was not included on the original special exception plat. However, because the construction bus is currently anticipated to be needed at the Property for an approximate three (3) year period, as well as its proposed location on the eastern edge of the Property, this special exception amendment is submitted for the County's additional review.

### **IV. DESCRIPTION OF THE CONSTRUCTION BUS:**

Bus work is a common component of substations and can be found in any area depending upon its design and purpose. Its overall role is to carry electrical current to different components within a substation. As stated above, the proposed construction bus will be needed to carry a portion of the transmission power flow around the areas of the substation where construction would occur. It will be a solid, steel, linear structure consisting of structural supports ranging from 35 to 37 feet on which seamless, tubular bus pipe will be attached via high strength insulators.

The construction bus is proposed in approximately the same location on the Property where an overhead distribution line existed for the past 30 years. This distribution line has recently been removed. The pole heights of the old distribution lines ranged from 34 to 39 feet depending upon topography, and the proposed construction bus supports will be slightly less, ranging from 35 to 37 feet. The construction bus will not produce any noise while in operation.

Dominion examined all locations on the Property for the placement of the temporary construction bus, ultimately determining that there is no other area on the Property it can be located due to the floodplain and existing overhead transmission on the west side of the site and the need to construct a new station in the middle of the project site. In addition, the temporary bus must be constructed before actual reconstruction of the above-grade substation equipment components of the project. The reason is two-fold: First, it must be in position and available for when Dominion is at the point it must de-energize the old equipment and switch the new equipment to the high bus. Second, once construction commences on the substation interior, there will not be opportunity or room to construct the construction bus.

It will be necessary for the construction bus to be located at the site for an approximate 3-year period until construction concludes. However, it will not be in operation the first year. It will simply be an unused structure, similar in appearance to scaffolding. The structure must be constructed first so it will be ready when needed. Further, due to the complex construction process, there will not be room or opportunity once remodeling of the substation begins to place the high bus in its necessary location. Once certain construction sequences are complete after approximately 1 year, the construction bus will be energized, and Dominion will continue to remodel the remaining substation areas. The high bus will remain in operation for approximately 2 years and will be dismantled when the newly constructed GIS equipment is complete and energized.

## **V. TREE TRIMMING AND LANDSCAPING**

As shown on the SEA Plat, residential properties that abut the eastern side of the substation have existing landscaping on their properties which will continue to shield views of substation equipment, including the construction bus. In order to protect the construction bus, Dominion reviewed existing off-site landscaping located on five (5) residential properties closest to the proposed high bus, and determined that trimming or specific tree removal (determined by health of the tree) would be necessary on four of the properties. In order to prevent danger limbs or trees from falling onto the high bus, Dominion approached these neighbors to request possible trimming or removal of trees in this area. These off-site landscape plans are shown in more detail on the SEA plat.

It is important to note that Development Condition 17 from the previously approved SE approval states, "Any trimming of trees on adjacent properties for purposes of construction shall be done under the supervision of a certified arborist and after notification of the property owner." Dominion abided by the requirements of this development condition when it approached these neighbors for this construction-related request.

Further, it is also important to note that during the SE process, Dominion offered to install off-site landscaping on any neighbor property who wanted additional screening. Development Condition 9 memorialized this promise, which also notes that said off-site landscaping may be installed prior to construction. Dominion approached these neighbors regarding the trimming/removal of trees in conjunction with discussions related to the addition of off-site landscaping. It is a logical point in the process to discuss these items as some trimming or tree removal will also allow for and support new planting survival.

## **VI. SECTION 9-011 OF THE FAIRFAX COUNTY ZONING ORDINANCE:**

The following information is provided pursuant to Section 9-011 of the Fairfax County Zoning Ordinance:

- A. Type of operation: Electric Substation
- B. Hours of operation: 24 hours/day, 7 days/week
- C. Estimated number of patrons: None
- D. Proposed number of employees: No permanent employees are proposed. The facility will be visited approximately 1 to 2 times per month by Dominion personnel for site inspection purposes, and for any needed repairs or alterations.
- E. Estimate of traffic impact: Given the minimal occurrence of site visits, traffic is not an issue.
- F. Vicinity or general area to be served by the use: The distribution component of the substation currently serve a specific service area from Merrifield, Falls Church, Tysons Corner, to the cities of Falls Church and Fairfax. The transmission component of the existing substation serves the entire Northern Virginia region. The proposed remodel and additional equipment will continue to serve these areas.
- G. Architectural compatibility: A substation has been in operation at this since 1947. There are no buildings associated with the substation, except unmanned control enclosures. The proposed enclosures and substation equipment will be surrounded by landscaping and a screening wall.
- H. Hazardous and toxic substances: There are no current or proposed hazardous or toxic substances proposed with the project, and the site will fully comply with all County, state, and federal environmental regulations.
- I. Statement of conformance: To the best of the Applicant's knowledge, the proposed use conforms to the provisions of all applicable ordinances, regulations, adopted standards, and any applicable conditions.

## VII. DESCRIPTION IN CONTEXT OF SECTION 9-006 OF THE ZONING ORDINANCE

### 1. The proposed use at the specified location shall be in harmony with the adopted comprehensive plan.

**RESPONSE:** The location of the existing substation, proposed remodel, and temporary construction bus is in harmony with the adopted Comprehensive Plan. The Plan map shows the property as public facilities, governmental, and institutional and further identifies the property as a Public Service and Utility Facility.

### 2. The proposed use shall be in harmony with the general purpose and intent of the applicable zoning district regulations.

**RESPONSE:** The proposed temporary high bus is in harmony with the general purpose and intent of the applicable zoning district regulations as discussed above. The existing electric substation facility is a permitted use within the R-3 District with special exception approval.

**3. The proposed use shall be such that it will be harmonious with and will not adversely affect the use or development of neighboring properties in accordance with the applicable zoning district regulations and the adopted comprehensive plan. The location, size and height of buildings, structures, walls and fences, and the nature and extent of screening, buffering and landscaping shall be such that the use will not hinder or discourage the appropriate development and use of adjacent or nearby land and/or buildings or impair the value thereof.**

**RESPONSE:** The existing substation has been located at the Property since 1947 and has residential development adjacent to three sides of the property. The proposed temporary construction bus is located adjacent to approximately five (5) residential neighbors, and it will not hinder or discourage use of these adjacent properties. As stated above, bus work is a common component of substations and can be found in any area depending upon its design and purpose. Further, the construction bus is proposed in approximately the same location on the Property where an overhead distribution line has existed for the past 30 years. The supports for the proposed high bus will be similar in height to the old distribution lines. In addition, the construction bus will not produce any noise while in operation.

**4. The proposed use shall be such that pedestrian and vehicular traffic associated with such use will not be hazardous or conflict with the existing and anticipated traffic in the neighborhood.**

**RESPONSE:** There is no pedestrian traffic associated with this use.

**5. In addition to the standards which may be set forth in this Article for a particular category or use, the Board shall require landscaping and screening in accordance with the provisions of Article 13.**

**RESPONSE:** The proposed high bus is temporary and will only be in place during the reconstruction of the substation equipment. Once construction is complete, the previously approved buffering and screening will be installed.

**6. Open space shall be provided in an amount equivalent to that specified for the zoning district in which the proposed use is located.**

**RESPONSE:** Open space is not affected by the temporary high bus.

**7. Adequate utility, drainage, parking, loading and other necessary facilities to serve the proposed use shall be provided. Parking and loading requirements shall be in accordance with the provisions of Article 11.**

**RESPONSE:** Adequate drainage and facilities exist to serve the temporary high bus.

**8. Signs shall be regulated by the provisions of Article 12; however, the Board may impose more strict requirements for a given use than those set forth in this Ordinance.**

**RESPONSE:** No new signage is proposed for the temporary high bus.

**V. CONCLUSION:**

The above-described application proposes necessary temporary equipment to allow for redevelopment of the existing substation. With approval of the requested Special Exception Amendment, the proposal will conform to the provisions of all applicable ordinances, regulations, standards, and conditions. Furthermore, the proposed use conforms to the Zoning Ordinance and the recommendations of the Comprehensive Plan. Therefore, for the reasons set forth herein, Dominion respectfully requests the approval of this application.

Respectfully submitted,

McGUIREWOODS LLP

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