

DOMINION ENERGY FOCUS GROUP INPUT – MAY 7, 2020

MEETING DATE	COMMUNITY GROUP/ADVISORY BODY	COMMENT
5/7/2020	Dominion Energy	Substation development driven by customer demand for power in an area; data centers biggest consumers of electrical load compared to other consumers and prompt most new substations, but Dominion maintains any excess capacity to provide electrical service to all customers (e.g. substations not solely established for one use or group of users); data centers are main driver behind future electrical grid planning & growth; data centers coming in asking for new projects/expansion of existing projects, providing power need schedules and construction schedules to Dominion, Dominion is given ultimate growth/wants to know what load ramp schedule is that plots between existing and ultimate growth. New substations are typically providing 2-3 years worth of additional capacity, Dominion would prefer longer. There are limitations to how much load can be provided with a given substation, about 300 MW. Many data centers now requiring 50-100 MW per building, a single substation may serve a single data center campus.
5/7/2020	Dominion Energy	Data centers are main source of demand driving planning for future electrical grid growth; data center operators request service for new projects and/or expansion of existing facilities and providing Dominion with power need and construction schedules; Dominion determines load ramp schedule that plots between existing grid capacity and ultimate growth, which in turn determines substation needs. New substations are typically proposed within 2-3 years of need being established (e.g. "window" between need being identified and need being operational).
5/7/2020	Dominion Energy	The maximum load limit for a substation is 300 MW; many data centers now requiring 50-100 MW per building; not unusual for a single substation to be required to serve the power needs of a campus of multiple data centers (e.g. multiple customers/users).
5/7/2020	Dominion Energy	Substations typically aren't dedicated to a single/individual customer; substations are rarely dedicated because Dominion doesn't want stranded assets (permanently dedicated to a specific customer or customers) in the field; additional/surplus capacity will be made available to the network.
5/7/2020	Dominion Energy	National Electric Reliability Corporation (NERC) is the federal agency that sets reliability standards for electric utilities and enforces them, and is further comprised of regional entities (e.g. SERC is responsible for Loudoun County and much of the rest of Virginia); these agencies set thresholds/reliability criteria (e.g. MW limits for substations) designed to maintain reliability for an area, maintains grid health and resiliency.
5/7/2020	Dominion Energy	Zoning Ordinance currently includes three different substation types by definition (dedicate, distribution, transmission), with Commission Permit (CMPT) approval required for some but not all; HOWEVER, in terms of ultimate operation and appearance, the three substation types are nearly identical (no visible/discernable difference in form or impact to public).
5/7/2020	Dominion Energy	Current Zoning Ordinance definitions for the different substation types/uses are not clear and do not accurately align with actual operations.
5/7/2020	Dominion Energy	Recommended that the new ordinance include a single definition for substation use, which should be based on the electrical components of the substation and possibly with performance standards that address customary impacts to the public (e.g. visual impacts, notably to traffic on nearby roads and nearby businesses/customers).

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5/7/2020	Dominion Energy	No discernable difference in the public eye between dedicated, distribution, transmission substations.
5/7/2020	Dominion Energy	Siting of a transmission-level facility versus a distribution-level facility is based on role in moving electrical load across grid; transmission-only substations (aka switching stations) typically occur along ROWs in close proximity to originating transmission lines (e.g. transmission lines in, transmission lines out); distribution substations are usually located closer to the customers driving need for the substation (e.g. data center campus(es)) and include transformers and circuits to convert electrical levels from transmission line entering substation (230 MW) to distribution lines to customers (34.5 MW); that said, a transmission substation may also consider distribution options (again, in reality a single substation may serve multiple purposes within the grid, so it is impossible to truly distinguish between types).
5/7/2020	Dominion Energy	Most substations currently being developed by Dominion are focused on distribution of electricity to customers (e.g. data centers as well as commercial, residential users).
5/7/2020	Dominion Energy	Consider consolidating various substation types into a single use; if some type of distinction is needed, consider applying different performance standards based on the proposed scale of the facility.
5/7/2020	Dominion Energy	The ultimate need for CMPT approval for substations serving industrially planned (and zoned) areas was questioned, as such areas are envisioned by the Comprehensive Plan to include uses at intensities that inherently require the utility capacity that drive substation development; in effect, by designating areas for data center and/or industrial uses, the Comprehensive Plan has indirectly made all supporting infrastructure and utilities a "feature shown" that should arguably preclude the need for CMPT review/approval (same could apply to water/sewer facilities, etc.).
5/7/2020	Dominion Energy	Consider not requiring CMPT review/approval for utility facilities in districts where data centers are permitted, except maybe PD-TC, because expansion of system capacity via new substations is inherently necessary to enable by right uses (e.g. development as envisioned by Comprehensive Plan); the ordinance could instead include appropriate performance standards to further ensure/reaffirm compatibility with surrounding area and overall Comprehensive Plan vision (CAO review of Section 15.2-2232 needed to determine extent of County's flexibility to permit utility uses in such industrially designated/zoned areas without CMPT or other type of overt/distinct compatibility review).
5/7/2020	Dominion Energy	Utility substations required to have most intensive buffer type (C) on all four sides of facility per 5-600 performance standards; data center should be required to provide the buffer because they can predict where the utility will be and what it will be, know that a buffer will be required (assuming buffer necessary in such cases); currently, burden of buffering and implementing the buffer relative to easements falls almost entirely on utility; consider revising 5-600 standards to eliminate buffer requirement for substation when adjacent to data center or other by right industrial use (e.g. without requiring formal modification).
5/7/2020	Dominion Energy	Would like to see more consistency across the landscaping and buffering requirements for substations; would provide predictability to the industry and in turn help with planning process and related timelines, as well as minimize the quantity of modification requests that must be processed (most of which are approved).