

# Idylwood Substation Rearrangement Project



## Project Overview

The Idylwood Substation Rearrangement Project rebuilds the existing Idylwood Substation at Shreve Road, originally built in the late 1950s, in order to support growing capacity and projected reliability concerns in the region. These enhancements will allow us to continue providing safe and reliable electric service to the community.

Due to the limited space at the site, Dominion Energy is investing in Gas Insulated Substation (GIS) technology. The existing substation currently uses Air-Insulated Technology. By utilizing GIS technology, Dominion Energy will be able to largely utilize our existing footprint while modernizing the facility to meet area demand and minimizing impact to surrounding neighbors.

GIS is the best available technology and offers several benefits:

- GIS equipment takes up less space, allowing Dominion Energy to accommodate growth in the area, while operating within the existing property
- GIS is more reliable than traditional air-insulated substations, meaning fewer outages for customers
- GIS requires less maintenance than traditional substations

## Construction Timeline

The below timeline was created after receiving final permits needed to begin construction and reflect the most accurate and realistic timeframe to complete the project based on current known circumstances. This timeline does not include every aspect of the project, rather a high-level timeline of the key components needed to complete this project, as well as other construction activity that may be more noticeable by the community. Our project team would like to thank the community for their patience throughout this process and remember the timeline for individual activities is subject to change based on weather and other unforeseeable factors. The Company does believe, however, that the June. 30, 2026 energization date and overall construction completion date of Dec. 31, 2026 is achievable. The Company will periodically review this document and update it for changed circumstances.

<b>2021</b>		
<b>January-June</b>	38 kV GIS Building	Complete construction of the new GIS building that will house future distribution equipment.
<b>June-December</b>	38 kV GIS Connection	Connecting distribution equipment to 38 kV GIS building.
<b>September-December</b>	Brick Enclosure	Installation of permanent brick security enclosure section 1 (Shreve Road facing side). Landscaping to be installed after, timing subject to time of year to ensure successful growth. *Pending contractor engineering completion.
<b>November</b>	High Bus	Connect temporary construction high bus to new transformers and energize.
<b>November</b>	Transformer #4	Remove transformer #4 from service and remove from site.

<b>2022</b>	
<b>January-March</b>	Installing temporary structures to relocate transmission line to west side of the substation. Will be removed when 230 kV GIS building is complete.
<b>March</b>	Energizing circuits out of the 38 kV GIS building.
<b>April</b>	Replace overdutied breaker.
<b>May</b>	<ul style="list-style-type: none"> <li>Remove two existing transmission structures in the center of the substation.</li> <li>Install foundation and bottom half of new transmission structure (remaining half to be installed towards the end of the project).</li> </ul>
<b>February</b>	Remove distribution transformer #2 from service and remove from site.
<b>May-July</b>	Install 230 kV control house building foundations.
<b>August</b>	230 kV control house building installed.
<b>August-November</b>	Install four 230 kV backbone structures near 230 kV control house building and future 230 kV GIS building.
<b>November-December</b>	Install foundations for 230 kV GIS building.

<b>2023</b>	
<b>January-October</b>	Construct 230 kV GIS building and install associated equipment.

<b>July-September</b>	Install three 230 kV backbone structures on west side of 230 kV GIS building.
<b>October-June 2024</b>	Installing control cable and testing of equipment.

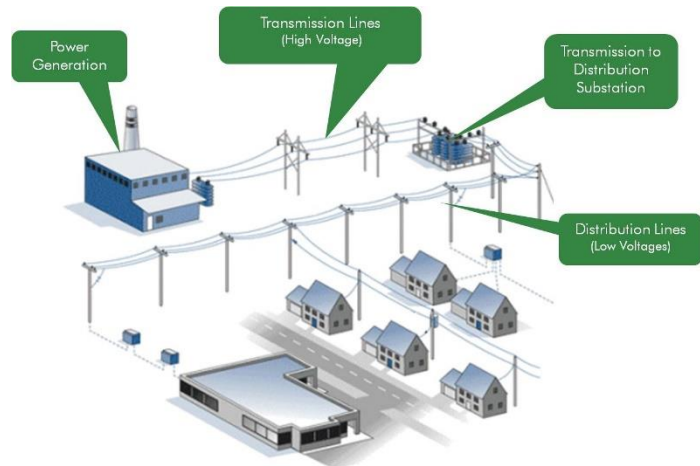
<b>2024</b>	
<b>January</b>	Install reactor foundations. Flexible timeline, subject to change.
<b>June-February 2025</b>	Transmission line conductors moved to new 230 kV GIS building. Crews visible working on bucket trucks. *Subject to change based on outage approvals, weather, etc.

<b>2025</b>	
<b>February-March</b>	Relocating 230 kV reactor and re-assembling and processing. *Will involve running equipment 24 hours for approximately one week.
<b>March</b>	Transmission line work associated with the 230 kV GIS building complete.
<b>June</b>	Energize 230 kV reactor.
<b>July</b>	Install 230 kV capacitor bank. *Last piece of transmission equipment to be installed
<b>September</b>	De-energize temporary construction high bus structure.
<b>July-January 2026</b>	Remove old 230 kV equipment.

<b>2026</b>	
<b>January-December</b>	<ul style="list-style-type: none"> <li>• Construct remaining sides of permanent brick security enclosure.</li> <li>• Remove old fence.</li> <li>• Replace existing chain link fence with non-conductive fence in the back of the substation.</li> </ul>
<b>January-December</b>	Grading, clean up, restoration, landscaping.
<b>June 30</b>	All new equipment expected to be energized.
<b>December</b>	Target construction completion date

## What is a substation?

A substation is a facility that changes voltage from high to low or from low to high, among other important functions. When electric transmission lines enter a substation, the voltage is lowered using transformers. The lower voltage electricity is delivered to customers using electric distribution lines.



Item	Definition
<b>Backbone Structure</b>	A structure that drops the electric transmission conductor heights from an overhead structure to connect to the substation equipment.
<b>Breaker</b>	Protects other substation equipment in the event of an overload by detecting a fault and discontinuing electrical flow.
<b>Bus</b>	Metallic strip or bar (typically copper, brass or aluminum) that conducts electricity.
<b>Circuit</b>	Path in which electrons from a voltage or current source flow.
<b>Conductor</b>	A metallic wire that allows electrical current to flow through it. Conductors are the "lines" you see connected to electric transmission and distribution structures.
<b>Construction Bus</b>	A steel, linear structure which will bring the transmission power source from one end of a substation to another; Temporary in nature.
<b>De-Energize</b>	Remove from electrical service.
<b>Energize</b>	Electrical service is "live" or in service.
<b>GIS</b>	Gas insulated substation; specialized equipment used in areas where expansion of existing equipment is limited.
<b>GIS Vault</b>	Underground housing for electrical cable and equipment.
<b>In-Service Date</b>	Date that substation equipment is energized.
<b>Reactor</b>	Controls reactants on the system by regulating and stabilizing the impedance and capacitance on an electric transmission line.
<b>SCC</b>	State Corporation Commission - provides utility oversight in Virginia.
<b>Transformer</b>	Device that increases or decreases voltage.