



**Connecticut
Light & Power**

A Northeast Utilities Company

Your Guide to Electrical Substation Construction

The addition of a new substation in your area will improve the reliability of electric service to Connecticut Light & Power (CL&P) customers while increasing our ability to serve the growing demand for electricity in the future.

The electrical grid is a network of power lines and structures that transport electricity at nearly the speed of light from where it is produced to where it is needed.

Similar to an electric “superhighway,” transmission lines move power over long distances. Local substations act as an electrical “off-ramp,” reducing transmission voltage levels down to the level that is required to serve homes and businesses.

This guide provides an illustrated overview of how the construction of an electrical substation typically proceeds. It also includes information about the Sherwood Substation project in Westport, Connecticut, approved by the Connecticut Siting Council in May 2010. It is expected to be in service in 2012.



What

CL&P is building a new 115/13.8-kilovolt bulk power substation in Westport, Connecticut, called the Sherwood Substation project.

Why

The substations now serving the southeast section of Westport have been operating at or near capacity in recent years. Through the peak summer months, temporary mobile equipment has been installed at the substations. A new facility is needed as a permanent solution to supply the growing load in Westport and strengthen the reliability of the electrical supply in the area.

Where

The new facility will be located on a parcel of land currently owned by CL&P near the railroad underpass on New Creek Road in Westport.

When

Construction began in September 2010. The new substation is expected to be in service in the second quarter of 2012.

Learn More About It



Visit www.transmission-nu.com

As with all construction projects, some noise and disruption are likely during the project. CL&P strives to keep any inconveniences to a minimum.

Keeping the lines of communication open is an important part of our work in your community. Feel free to contact us with any questions or concerns you may have about the project:

- ▶ Visit www.transmission-nu.com, then Project Information for Customers.
- ▶ E-mail us at TransmissionInfo@nu.com
- ▶ Call us at 1.800.793.2202

*Thanks in advance for your patience
as we work to keep our electric system reliable.*

Work at electrical substations typically follows this sequence:

PREPARATION

Site Selection/Review

Selection of a suitable site involves choosing a location within the area in need of additional electric capacity and close to existing electric transmission lines. The site must be able to support the facility's size and construction requirements. Prospective sites are closely surveyed for soil conditions, wildlife, vegetation, and archeological or historic resources. CL&P takes great care to protect wetlands and habitats supporting rare and endangered species.

Pre-Construction Site Work

Before site preparation begins, a detailed work plan is developed which includes specific protection measures for wetlands and endangered species. As part of the work plan, wetlands and special habitats are marked. Annual breeding and hibernation cycles of certain species are taken into consideration when creating a construction schedule.

Site Preparation

Crews are briefed on the special care that must be taken while working in the sensitive areas, including limiting ground disturbances. Erosion and sedimentation controls are installed at the outer limits of the construction area. In preparation for construction, the access road and site are cleared of vegetation. The ground inside the substation is covered with a layer of gravel to facilitate drainage and provide crews with a safe work surface.



CONSTRUCTION

Concrete Work

Concrete footings and foundations are poured shortly after the site is cleared. The substation framework, support structures and equipment will be placed on the concrete pads. Underground pathways are installed to house electric and communication lines between the control house and equipment in the substation “yard.”

Steel Erection and Civil Construction

Once the concrete has cured, the steel framework – typically towers or poles – is ready to be installed. The steel supports electric control equipment and the transmission lines that connect the substation to the regional electric grid. A control building will be built for the electric control equipment. In addition, new transmission lines are strung to adjacent transmission lines.

Equipment Testing

The new equipment is extensively tested before the substation goes on line to serve customers. This step ensures the facility will operate safely and reliably for years to come.



RESTORATION

Energization and Site Restoration

Upon completion of construction and testing activities, the substation is energized. All disturbed or exposed areas outside the fence line of the facility are re-vegetated and seeded to establish a ground cover and protect the soil from erosion. The final landscaping includes planting more than 190 trees and shrubs.

Post-Construction Operation

Most substations are not staffed once they are placed in operation. Technicians may visit the facility on a regular basis to perform routine maintenance and monitor its operation. Most new facilities use motion-sensor or other lighting at night for security and safety reasons.





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Address Correction Requested

**A stronger electrical grid means
increased reliability**