May 2019

PSE&G ELECTRIC RELIABILITY IMPROVEMENTS

UTILITY INFRASTRUCTURE UPGRADES

IN CRANFORD

ABOUT THIS PROJECT

What are 69,000-volt (69 kV) electric lines?

69kV electric lines are the standard of the 21st century. They will ultimately replace and enhance a 50+ year-old system built on 26kV lines, increasing reliability, capacity and safety.

What will these projects do?

PSE&G is currently improving its electric reliability statewide by upgrading its utility infrastructure. These infrastructure upgrades include the addition of a 69kV network that will alleviate the demand on the existing 26kV network. These upgrades will increase electric service reliability and system redundancy to ensure safe and reliable electric service to our customers.

Since 2007, PSE&G has installed more than 400 miles of 69,000-volt (69kV) lines in more than 93 municipalities in New Jersey. By the end of 2023, we anticipate that 570 miles will have been upgraded.

Why are these upgrades needed?

These upgrades are needed to address the demand for electric reliability throughout PSE&G's service territory. As populations have increased and consumer electronic needs have evolved, the 26kV power supply legacy networks of the last century have been taxed. The addition of a 69kV network will alleviate the demands on the existing 26kV network. In addition, these upgrades provide an additional level of redundancy to the network by interconnecting stations.

Is this project approved?

PSE&G is charged with providing safe, adequate and proper electric service to its customers, as well as upgrading the system as needed for reliable service. In the course of fulfilling those obligations, PSE&G regularly conducts system upgrades and improvements.

This project was approved and assigned to PSE&G by PJM Interconnection LLC (PJM) as a baseline reliability project in October 2017. PJM is the regional grid operator for 13 states in our region. This baseline project is required to maintain system reliability and redundancy.

PSE&G, as a New Jersey public utility required to provide safe, adequate and reliable service throughout its service territory, has the legal authority to occupy the public right-of-way with electric and gas facilities without obtaining state or local approvals. The authority for the construction and maintenance of utility poles along public streets in New Jersey is governed by statutory authority in Title 48, and is not subject to the jurisdiction of local boards.

How is this project related to the proposed new substation in Cranford?

A new station is needed to replace the existing outdated Clark substation. The property, however, is not large enough accommodate a new station while keeping the existing station in service. At this time, PSE&G is in negotiations for a property in Cranford. The line now being built is required by PJM, and will connect PSE&G's Front Street substation in Scotch Plains with its Springfield Road substation in Union. In order to better plan for future needs, we are building this line so that it can connect with the new substation, providing enhanced redundancy and reliability.

When were town officials notified of this project?

PSE&G notified Cranford officials about this project in January 2019. The company and town officials reviewed the project again in detail in early April. On April 8, 2019, PSE&G presented information about the project to the Cranford Township Committee.

Will this project impact my property value?

PSE&G believes the project will have no permanent impact on property values. Studies indicate that, like all construction projects, there is disruption during the building phase that may have a small impact on property sales. Once the project is complete, with all market conditions being equal, property sales return to normal.

Are there other lines of this voltage or higher in Cranford?

Yes. Multiple 230kV lines run through the southern portion of Cranford.

Are you considering other routes?

PSE&G is assessing recommendations made by municipal officials and will provide additional information when available.

CONSTRUCTION

What is the route for this project in Cranford?

The planned route will go along Walnut Avenue, Lincoln Avenue, Meeker Avenue, Lexington Avenue, Chester Lang Drive and South Avenue.

Why aren't you building this entire project underground?

Building the 69kV utility lines underground is six to seven times more expensive than typical utility pole construction. The additional expense does not include burying any of the existing electric service lines, telecommunication, and cable. PSE&G is an overhead utility, meaning that power lines are built overhead where feasible. Of the more than 400 miles of 69kV lines PSE&G has built since 2007, the vast majority are overhead. Lines are built underground only when engineering determines it's necessary, such as crossing a railroad, highway or river.

How long will the project take to complete? When will it start?

The project in Cranford, both overhead and underground segments, will take approximately one year to complete. Work is expected to begin later this year.

How many poles will be installed? How tall are they, and how far apart?

The project will replace 73 existing poles. In general, the existing poles are between 45 and 55 feet tall (38 and 47 feet above ground). The replacement poles will range between 65 and 75 feet tall (56 and 65 feet above ground). The new poles will have the same spacing as the existing poles.

Why are the replacement poles taller?

The height of a utility pole is determined by several factors.

- The number of wires carried by the pole – the more wire, the taller the pole.
- The voltage of the wires –different voltages require different spacing between the wires.
- The addition of static wire, also known as lightning protection. This project involves installing both a 69kV line and lightning protection on the new poles.

Why do the replacement poles appear twice as high as the old poles?

Once a replacement pole is installed and the electric wires are transferred, the old pole is shortened to the height of the lower telephone and/or cable television lines that share the pole. As a result, the public sees the new pole next to an old pole that is much shorter than it had been, at a new height of just 20 to 25 feet above the ground.

When will the old poles be removed?

The old poles will be removed by the phone and cable companies once they transfer their wires onto the new pole lines.

How will you minimize disruption to residents and businesses during construction? Will traffic be disrupted?

PSE&G will work with municipal officials to minimize any disruptions and coordinate traffic flow during construction. We will also communicate any disruptions directly with impacted customers.

Why is PSE&G trimming and removing trees near the new poles? How many trees will be affected, and where?

The NJ Board of Public Utilities (BPU) and prudent utility practice mandate that PSE&G remove tree branches and limbs to ensure that they do not become entangled with, or damage, the electric lines. This regular vegetation management minimizes power outages. An estimated 46 trees along this route will be trimmed, and another 15 will be removed. All trees that are removed will be replaced with two new utility-friendly trees.

SAFETY

Are there any health hazards associated with 69 kV lines?

There is no documented evidence that utility lines pose a health risk. Electric lines of various voltages can be found on almost every roadway in New Jersey, as well as throughout North America.

Can you explain the impact of electromagnetic fields (EMFs)? Is it safe to build this line on a residential street?

The existing lines carry currents that are comparable to 69 kV lines, and produce similar magnetic fields. All of the lines produce magnetic field levels at the surrounding properties that range from 2 to 4 milligauss, which are comparable to existing background levels created by building wiring, lighting and appliances.

Electric and magnetic fields are created by any device that produces, carries or uses electrical energy. The magnetic field produced by a three-phase power line depends on the current in the conductors, the spacing between the conductors and the distance from the power line. Voltage of the line has no effect on the magnetic field.

The National Institute of Environmental Health Sciences (NIEHS) has estimated the average level of background magnetic fields range from 0.5 to 5.0 milligauss (mG) in most homes. The New Jersey Department of Environmental Protection (NJDEP) also lists typical magnetic field levels measured six inches away from common appliances. The NJDEP list includes:

- Hair dryer - 300 milligauss
- Electric shaver - 100 milligauss
- Blender - 70 milligauss
- Can opener - 600 milligauss
- Coffee maker - 7 milligauss
- Microwave oven - 200 milligauss
- Color TV (1 foot away) - 7 milligauss

Residents who have specific questions or concerns may call our project hotline at 800-901-5035 to speak with an EMF specialist. Additional information about EMFs can also be found online:

The World Health Organization - International EMF Project
http://www.who.int/peh-emf/en/
http://www.who.int/peh-emf/publications/facts/fs322/en/index.html

U.S. National Institute of Environmental Health Sciences (NIEHS)
http://www.niehs.nih.gov/health/topics/agents/emf/
http://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

U.S. Environmental Protection Agency (USEPA)
https://www3.epa.gov/radtown/electric-magnetic-fields.html

National Cancer Institute (NCI)
http://www.cancer.gov/cancertopics/factsheet/Risk/magnetic-fields

New Jersey Department of Environmental Protection (NJDEP)
http://www.nj.gov/dep/rpp/nrs/
http://www.nj.gov/dep/rpp/nrs/powlines.htm

What chemicals are used on the poles? Is it safe?

The two major chemicals contained in the treated wood poles are pentachlorophenol, which has been in use since the early 1930s, and diesel fuel. More than half of the 183 million utility poles in the United States are treated with penta. According to the 2008 Decision Document published by the United States Environmental Protection Agency, "EPA considered the available information and, after a thorough evaluation of the risks and benefits associated with each use, has determined that the wood preservative uses of Pentachlorophenol will not pose unreasonable risks to humans or the environment …"

Are 69 kV lines and substations a concern for firefighters who respond to downed electric wires or transformer fires?

Firefighters who respond to this type of situation are trained in safety around electric wires and equipment. Firefighters and police personnel will secure the area, maintain crowd and traffic control and await response by PSE&G. This upgrade poses no additional hazards to first responders. In fact, the 69-kV equipment is much more storm-resistant. The new sturdier poles, fiber optic communications wire and upgraded relay protection all serve to minimize faults or problems on the line.

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PSE&G will continue to provide updates to Cranford officials on this important reliability upgrade project as information becomes available. In the meantime, should you have additional questions or concerns about this project, please contact PSE&G's Project Hotline at 800-901-5035. All calls will be returned within 24 hours during normal business days.