

Restoring Power is a Complex Process

By: Art Guida, Director-External Affairs, PSE&G

Those of us in the electric delivery business are comforted by the fact that our customers have become so accustomed to the reliability of our electric service that you don't have to think about what it takes to provide safe and reliable power to every apartment, home, business, public institution, health care facility, school, and I could go on and on. As consumers, we expect to flip a switch and the lights turn on.

During major storms such as Hurricane Irene and the October 2011 wet snow storm; and other major weather events, we experienced first hand the 'inconvenience' of being without electric power for an extended period of time.

The power grid, from its origin at the generating station to your home or business, is a complex set of grids that transport large volumes of electricity through a series of 'step-down' transformers and finally to the end user. During storms the like of Hurricane Irene and October's snow storm, fallen tree limbs, lightning strikes, and high winds wreak havoc on the electric distribution grid. Unfortunately, the damage is rarely localized so that we can concentrate the necessary restoration resources to one location. Wide spread outages by defini-

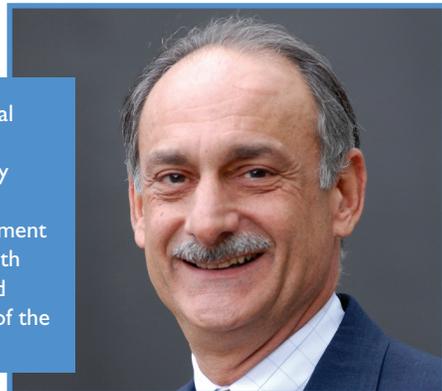
tion take time to rebuild the network, and rebuild is an accurate term.

The safety of the public and our work force is the first priority. Not a single service will be restored until we are certain the working men and women, who themselves may be out of power at home, have a safe work environment. This sometimes means that the storm must pass before crews are able to

After critical facilities are restored, the order in which repairs are made follows the path that electricity takes as it comes from the power plants to the customer.

In summary, restoration crews begin with primary lines that can restore power to per-

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begin to assess the damage. Then and only then does the restoration process begin.

Power Restoration Process

Restoration plans following outages are designed to get power back on to the most people in the shortest time. Crews rely on a process recognized as an industry standard best to get power back on as quickly as possible. Hospitals, police departments, fire stations and other public health and safety facilities are priority number one.

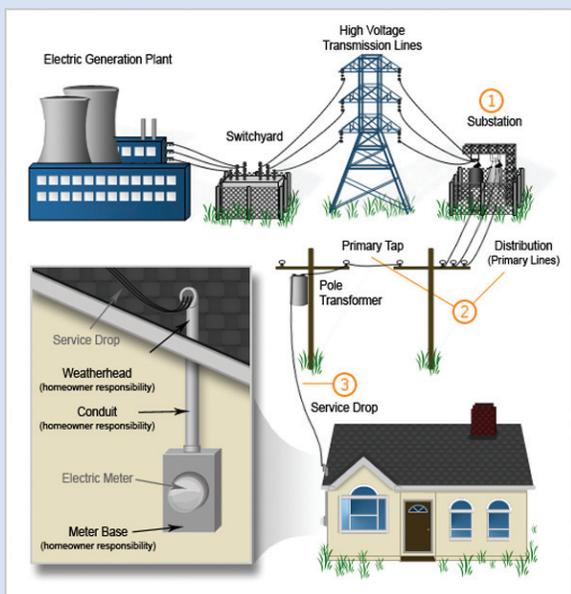
haps thousands of people. Then they move to lateral lines that can affect hundreds; secondary lines that affect dozens; and finally to service drops at individual homes. This is why homes in the same neighborhoods can be restored at different times and why businesses are sometimes restored first because of their high traffic locations along primary lines.

Partnerships Work Best

Every lesson learned exercise I've participated in following a major weather related event highlighted the importance of communications prior to, during, and after the storm. Among every level of government, utility companies, all essential service providers and the residents we serve. What is equally apparent is that the partnerships that are required to manage through a crisis must be developed and nurtured now in order to be prepared for the next event. Many years ago, a colleague taught me that, "When you need a friend is not the time to make a friend."

For local officials I would think it is invaluable for you to understand what it takes to restore power after a major storm so that you to communicate effectively to your residents. In the end we are all working toward the same goal so our communities and individual lives can return to normal.

Power Restoration Process



Step 1 – Substations

Repair any damage on the main distribution lines that leave the substations. This initial step restores power to the largest number of customers.

Step 2 – Neighborhoods

Repair damage on the tap lines that branch off the main line into groups of homes or neighborhoods.

Step 3 - Individual Service

After the larger main lines and neighborhood lines are repaired, work begins to restore power to individual residences.