

Understanding the Electric Power Industry's Response and Restoration Process



Electricity is a crucial product many of us take for granted. We scarcely think about it, unless we don't have it. Because electricity plays such an important role in our everyday lives, we rely on electric companies to provide a reliable supply of on-demand power. Companies constantly plan for emergency situations that could impact their ability to generate or deliver power. And, the industry has a strong track record of maintaining high levels of reliability.

No matter how well the industry is prepared, hurricanes, earthquakes, storms, and other natural and man-made disasters can cause significant damage to the energy grid, creating widespread power outages. Following these events, electric companies must respond safely, swiftly, and efficiently to restore service to large numbers of affected customers. Edison Electric Institute's (EEI's) members, the nation's investor-owned electric companies, often turn to our mutual assistance program—a voluntary partnership of electric companies from across the country—to help restore power efficiently. Such was the case in 2012 after Superstorm Sandy, which

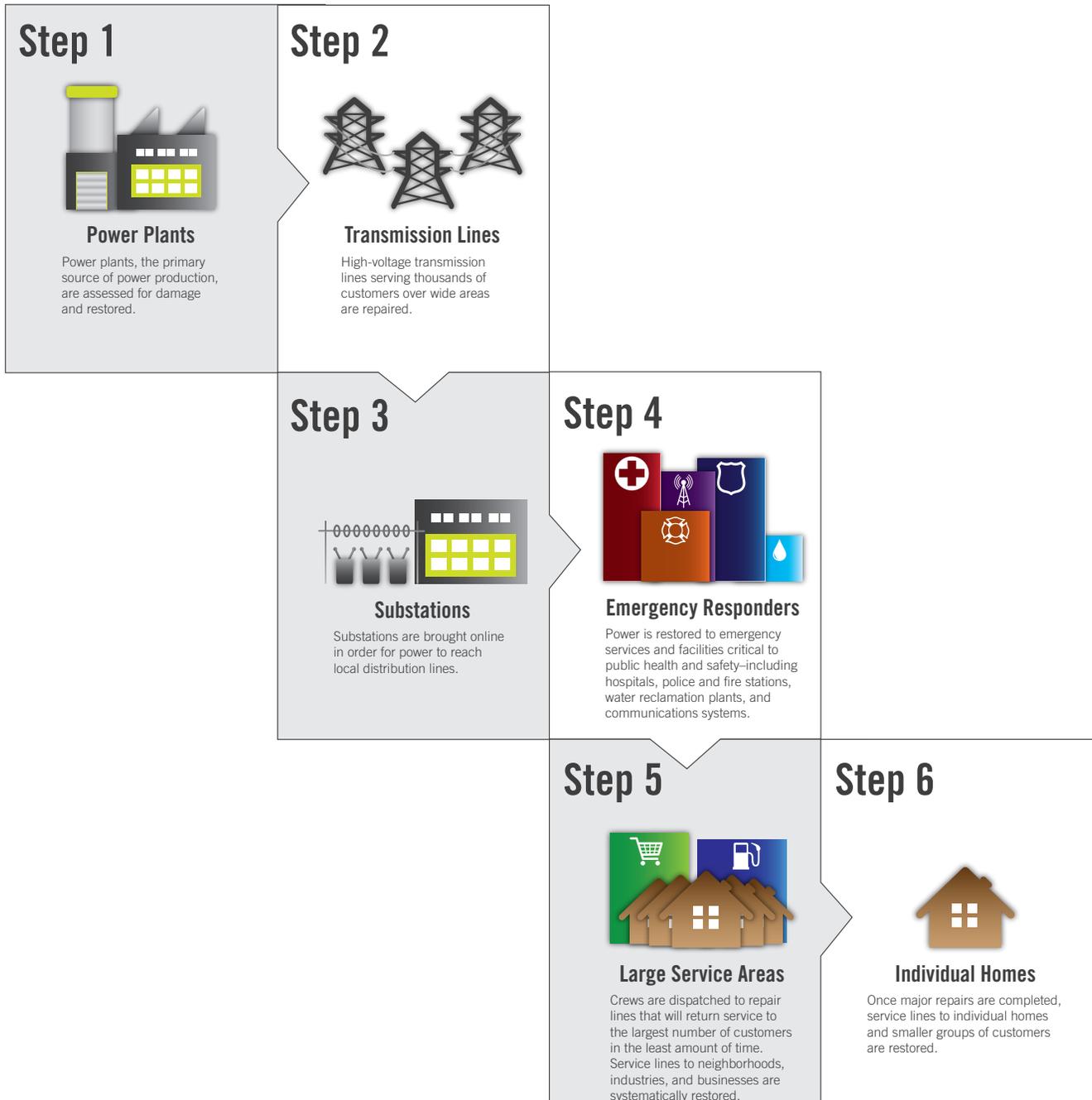
impacted 24 states and left as many as 10 million customers without power.

Following are frequently asked questions about the response and restoration process and the steps we are taking to enhance our mutual assistance program to improve public safety, accelerate the industry's response, and reduce potential economic consequences.

For more information, visit EEI's website at www.eei.org.

The Storm Restoration Process

Every electric company has a detailed plan for restoring electricity after a storm. Typically, one of the first steps a company takes—to prevent injuries and fires—is to make sure that power is no longer flowing through downed lines. Restoration then proceeds based on established priorities.



How do electric companies prepare for storms and other events that can cause outages?

Electric companies' power restoration and business continuity planning includes year-round preparation for all types of emergencies, including storms and other weather-related events, as well as cyber and physical infrastructure attacks. For example, companies conduct exercises and drills to prepare them to respond to significant outages—whether they are caused by an expected storm or by an event that occurs without warning.

Restoring power after a major incident is a complex task that must be completed as safely and efficiently as possible. A speedy restoration process requires significant logistical expertise, along with skilled workers and specialized equipment. Electric companies begin their preparation for weather-related events long before an event actually occurs, with organization-wide plans and drills that involve virtually all employees. When a major storm or natural disaster is expected, electric companies begin their standard preparations to organize restoration workers, trucks, and equipment.

What is the mutual assistance program?

EEL's mutual assistance program is a voluntary partnership of investor-owned electric companies across the country committed to helping restore power whenever and wherever assistance is needed. Municipal utilities and electric cooperatives also have their own mutual aid programs that provide restoration support to their participating utilities. EEL communicates regularly with the associations that serve municipal and cooperative utilities during major outage incidents. Created decades ago, our mutual assistance program provides a formal, yet flexible, process for electric companies to request support from other electric companies in parts of the country that have not been affected by major outage events.

Mutual assistance is an essential part of the electric power industry's service restoration process and contingency planning. Electric companies impacted by a major outage event are able to increase the

size of their workforce by “borrowing” restoration workers from other companies. When called upon, a company will send skilled restoration workers—both company employees and contractors—along with specialized equipment to help with the restoration efforts of a fellow company.

How does mutual assistance work?

Partnerships in our mutual assistance program are based upon voluntary agreements among electric companies within the same region. Most of these agreements are managed by seven Regional Mutual Assistance Groups (RMAGs) throughout the country. When a member determines that it needs restoration assistance, it initiates a request through an RMAG.

RMAGs facilitate the process of identifying available restoration workers and help companies coordinate the logistics and personnel involved in restoration efforts. For example, RMAGs can help companies locate specialized skill sets, equipment, or materials, and can assist in identifying other types of resources that may be needed, including lineworkers, tree trimmers, damage assessors, and even call center support.

Company restoration workers involved in mutual assistance typically travel many miles to help the requesting company rebuild power lines, replace poles, and restore power to customers. Before their restoration work begins, the volunteer restoration workers receive any necessary safety training and an overview of the affected facilities from the host electric company.

How are the RMAGs organized?

RMAGs are organized geographically to meet the needs of electric companies during emergency situations most effectively. Although participation is voluntary, each company in an RMAG has committed, when possible, to send its restoration workers, contractors, and specialized equipment to help other companies in the network when called upon to do so. If needed, companies in one RMAG will assist those in another region. By sharing resources among companies, the RMAGs help to mitigate the risks and costs related to restoring power following major outages. Together, the RMAGs enable a consistent,

unified response to emergency events that result in a significant loss of power.

How do RMAGs help to maintain electric reliability throughout the country during a major restoration effort?

RMAGs develop contingency plans to ensure that the transfer of resources from one electric company or region to another has a minimal effect on a regional area if an unexpected event occurs within the service areas of assisting companies. Contingency plans are developed according to the amount of resources—both restoration workers and equipment—being transferred either to a region or to a larger geographic area.

What are the key goals of the mutual assistance program?

The mutual assistance program serves as an effective—and critical—restoration resource for electric companies because of its unique structure. It is both flexible and voluntary, empowering the network to respond quickly to the unpredictable nature of weather, while also recognizing that any one company may be limited in its ability to provide resources at a given point in time.

While a primary goal of the mutual assistance program is to restore electric service in a safe, effective, and efficient manner, the program also serves additional objectives that benefit the entire electric power industry. The mutual assistance program:

- Promotes the safety of employees and customers;
- Strengthens relationships among electric companies;
- Provides a means for electric companies to receive competent, trained employees and contractors from other experienced companies;
- Provides a predefined mechanism to share industry resources expeditiously;
- Mitigates the risks and costs of member companies related to major incidents;

- Proactively improves resource-sharing during emergency conditions;
- Shares best practices and technologies that help the electric power industry improve its ability to prepare for, and respond to, emergencies;
- Promotes and strengthens communication among RMAGs; and
- Enables a consistent, unified response to emergency events.

What have been some of the largest mutual assistance responses?

The damage done by Superstorm Sandy in October 2012 was unprecedented in its size and scope. Approximately 10 million customers lost power across 24 states in the Northeast, Mid-Atlantic, and parts of the Midwest. In response, the electric power industry deployed an army of tens of thousands of restoration workers—representing 80 companies from almost every state and Canada. The goal was to restore power as quickly and safely as possible.

The June 2012 derecho—a sudden and widespread storm with peak wind gusts ranging from 80–100 miles per hour—caused more than four million people across Ohio and the Mid-Atlantic to lose power. Companies responded with a workforce of about 30,000, including local company workers and crews from as far away as Canada, Texas, and Wyoming.

In August 2011, Hurricane Irene made landfall on the East Coast, leaving approximately nine million customers without power. Nearly 50,000 electric company restoration workers from as far away as the West Coast and Canada assisted with the restoration efforts in 14 states and the District of Columbia.

When Hurricane Katrina hit the Gulf of Mexico in August 2005, it damaged almost an entire 400-mile section of coastline from central Louisiana, across Mississippi, and into Alabama and western Florida, and destroyed much of the energy grid in the area. More than 46,000 electric company restoration workers and contractors from around the country travelled to the Gulf Coast to help the local electric companies with their monumental restoration effort.

What are electric companies doing to strengthen the mutual assistance network after Superstorm Sandy?

The electric power industry is committed to strengthening its preparations for, and response to, emergency events that threaten electric service. Electric companies, contractors, and vendors that provide support or services during outage events meet annually to discuss the outage events that have taken place over the past year; to share lessons learned when responding to storms; and to allow restoration managers to learn about technologies and products that could assist them during future weather-related events.

One of the important lessons learned following Superstorm Sandy was that there were too many small RMAGs in the Northeast. In September 2013, the Mid-Atlantic Mutual Assistance (MAMA), New York Mutual Assistance Group (NYMAG), and the Northeast Mutual Assistance Group (NEMAG) finalized their merger into the North Atlantic Mutual Assistance Group (NAMA)—reducing the total number of RMAGs from nine to seven.

This merger included 21 companies across 13 states, one district, and four Canadian provinces. Merging these three smaller RMAGs into one larger RMAG allows better coordination of the resources available to the participating companies and increases the ability of the RMAG to provide more self-sustaining support for most local and regional outage events without having to reach out and coordinate across multiple RMAGs.

In the aftermath of Superstorm Sandy, EEI members also recognized the need to enhance and formalize the mutual assistance program for national events. In September 2013, EEI's Board of Directors approved a framework to institutionalize the lessons learned and best practices from Sandy in order to optimize restoration efforts following events that impact a significant population or several regions across the U.S. and require resources from multiple RMAGs.

Why was the response and restoration process revised?

To prepare for severe storms and outage events that cross RMAG boundaries, such as Superstorm Sandy, we developed guidelines for responding to large, multi-RMAG or industry-wide National Response Events (NREs). Sandy was the single biggest post-storm restoration the electric power industry had ever undertaken. The damage was catastrophic and widespread. All RMAGs were impacted or involved in the restoration effort.

Prior to Sandy, there was not a national framework in place to respond to storms of this magnitude. Determined to enhance the restoration process, EEI members are institutionalizing best practices based on the lessons learned from Sandy. The electric power industry is prepared for significant outage events and continues to improve its coordination and response and recovery efforts. Customers have increasing expectations and electricity dependence, and we are committed to making our mutual assistance process safe, efficient, equitable, and scalable.

What is an industry-wide National Response Event?

The most serious outage events are classified by EEI members as "national response events" (NREs). An NRE is a natural or man-made event that causes or is forecast to cause widespread power outages impacting a significant population or several regions across the U.S. and requires resources from multiple RMAGs.

The response and restoration plan for a designated NRE includes a standing National Response Executive Committee (NREC), consisting of a rotating group of senior-level member company executives representing all regions of the United States. It also establishes an inter-RMAG framework for a national allocation of member company mutual assistance resources (company restoration workers, contractors, and spare materials).

When an NRE is declared, all available member emergency restoration resources (including contractors)

will be pooled and allocated to participating companies in a safe, efficient, and equitable manner.

What triggers an NRE?

An NRE is a natural or man-made event that causes or is forecast to cause widespread power outages impacting a significant population or several regions across the U.S. and requires resources from multiple RMAGs.

It's important to understand an NRE designation is reserved only for the most significant events, such as a major hurricane, earthquake, an act of war, or other occurrence that results in widespread power outages.

What is different about NREs?

Our current mutual assistance program works well for regional events, but was not designed to be scalable for national events. In the case of a designated NRE, our mutual assistance program will be scaled to a national level so member restoration resources are allocated in a singular and seamless fashion. The NRE process is overseen by the NREC, comprised of senior-level member company executives from all regions of the country. During an NRE, the NREC will activate a National Mutual Assistance Resource Team (NMART) that will evaluate mutual assistance requests and assign available resources to participating electric companies in coordination with the RMAGs.

For regional or local outages, mutual assistance resources will continue to be managed through the existing RMAG process, which concentrates on providing support across smaller geographic areas.

How has the industry worked with state and federal governments following Superstorm Sandy?

In the aftermath of Sandy, the electric power industry continues to work with the federal government and the states to enhance and formalize industry-government partnerships developed during Sandy that support the industry's response and restoration process. This is especially critical during events that impact significant populations or multiple regions and that require resources from multiple RMAGs. Areas of focus include:

- Communicating directly with government response teams at the U.S. Department of Energy during incidents to allow a direct, two-way flow of information between industry government emergency managers.
- Preparing for potential NREs (National Response Events) through annual exercises.
- Partnering with the U.S. Department of Transportation and state transportation agencies to expedite the movement of electric company resources in support of mutual assistance and power restoration.
- Negotiating a procedure for U.S. and Canadian border crossings with the U.S. Department of Homeland Security and the Canadian Border Services Agency to minimize delays and to ensure timely movement of mutual assistance fleets across the international border.
- Engaging in an ongoing dialogue with the U.S. Department of Defense (DOD) to build upon the unique capabilities that the military can provide in an emergency. This effort includes exploring opportunities for logistical support, such as access to DOD property and facilities for pre-staging areas, exploring ways to enhance security and road access with the National Guard, and securing access to critical supplies and equipment from the Army Corps of Engineers.

What is the role of the states during power restoration efforts?

The states and electric companies should continue to collaborate and work with first responders to ensure a flexible approach to storms and other events that lead to widespread power outages. A timely restoration effort requires a smooth transition of resources from other regions into the affected area, regardless of the state boundary. Company service territories often extend beyond state boundaries, and restoration work often involves multiple jurisdictions. Having flexibility to move resources to the outage location is the key to successfully completing a restoration.

The **Edison Electric Institute** (EEI) is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia, and directly and indirectly employ more than one million workers.

Safe, reliable, affordable, and clean energy powers the economy and enhances the lives of all Americans.

EEI has dozens of international electric companies as International Members, and hundreds of industry suppliers and related organizations as Associate Members.

Organized in 1933, EEI provides public policy leadership, strategic business intelligence, and essential conferences and forums.

For more information, visit our website at **www.eei.org**.