PJM Interconnection actively participates in the North American Electric Reliability Corporation, an organization whose mission is to ensure that the bulk electricity system in North America is reliable, adequate and secure.

Under the Energy Policy Act of 2005, the Federal Energy Regulatory Commission was required to designate an electric reliability organization to enforce mandatory reliability standards for all participants in the North American bulk power system. The Commission designated the North American Electric Reliability Corporation (NERC) as the electric reliability organization in July 2006.

Formed in 1968, NERC previously had used a voluntary approach – relying on reciprocity, peer pressure and the mutual self-interest of those involved in the power system – to promote its reliability mission.

NERC's role is to improve the reliability and security of the bulk power system in North America. To achieve that, NERC develops and enforces mandatory reliability standards; monitors the bulk power system; assesses seasonal and long-term reliability; audits owners, operators and users for preparedness; analyzes grid events for lessons learned; and educates and trains industry personnel. Among its many activities, it coordinates critical infrastructure protection and cybersecurity and facilitates the exchange of information among the eight regional reliability organizations that help carry out NERC's mission.

The members of the eight regional organizations come from all segments of the electric industry, including investor-owned utilities; federal power agencies; rural electric cooperatives; state, municipal and provincial utilities; independent power producers; power marketers; and end-use customers. These entities account for virtually all of the electricity supplied in the United States, Canada and a portion of Mexico.

In developing reliability standards, NERC’s process involves having registered members of 10 industry sectors vote to approve or reject proposed new standards. The sectors are: transmission owners; regional transmission organizations and independent system operators; Load Serving Entities; transmission-dependent utilities; electric generators; electricity brokers, aggregators and marketers; large electricity end users; small electricity users; federal, state and provincial regulatory or other government entities; and regional entities.