

Rapid Attack Detection, Isolation and Characterization Systems (RADICS)

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A substantial and prolonged disruption of electric power would have profound economic and human costs for the United States. From a defense perspective, a major power outage could hamper military mobilization and logistics and impair the capability to project force.

The goal of the **Rapid Attack Detection, Isolation and Characterization Systems (RADICS)** program is to enable black start recovery of the power grid amidst a cyber-attack on the U.S. energy sector's critical infrastructure. RADICS research is developing technology that cybersecurity personnel, power engineers, and first responders can utilize to accelerate restoration of cyber-impacted electrical systems. Program technologies will seek to accelerate recovery by maintaining situational awareness, enabling network isolation, and rapidly characterizing cyber-attacks:

- Enhanced situational awareness may enable operators to thwart an attack or blunt its effects and thereby minimize physical damage to electrical equipment that would otherwise take significant time to repair. RADICS technologies will improve situational awareness by providing accurate and timely information about grid state before, during, and after an attack.
- An attacker may continue network-based attacks during recovery efforts to delay power restoration. RADICS technologies will enable the creation of isolated emergency networks that would permit secure responder coordination and power systems communication.
- Cyber-attacks on critical infrastructure can take many forms, including the corruption of configuration files and introduction of malicious code. RADICS technologies will safely and automatically map and assess the state and configuration of electrical power networks and detect and characterize power grid malware.

The RADICS program is developing a testbed and exercise format to enable evaluation and improvement of technologies as they are developed. RADICS research is coordinated with other U.S. government departments and agencies that focus on power grid cybersecurity.

Source: <https://www.darpa.mil/program/rapid-attack-detection-isolation-and-characterization-systems>