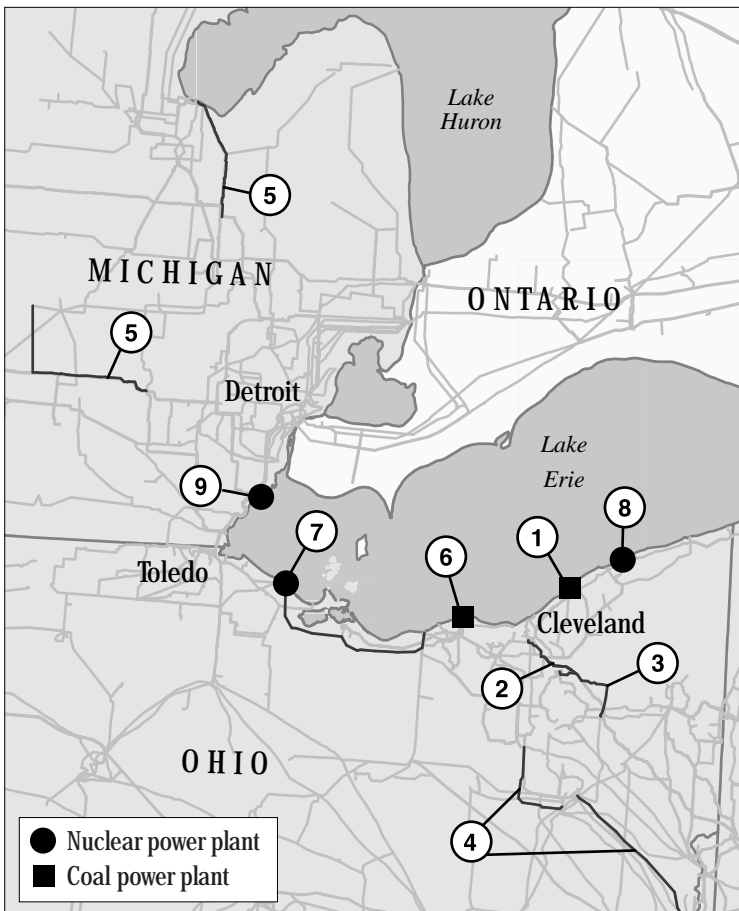


# Sequence of tripped transmission lines

Federal and industry regulators investigating what triggered Thursday's Northeast blackout narrowed their search to three as yet unspecified transmission lines near Cleveland. The northeastern United States and Canada did not report significant outages before 4:11 p.m. EDT



**1** 2:00 p.m. A 680-megawatt FirstEnergy Corp. coal plant in Eastlake, Ohio trips off.

**2** 3:06 p.m. A 345-kilovolt power line trips, putting extra power on a neighboring line.

**3** 3:32 p.m. Extra power flowing through the neighboring line causes it to sag into a tree and trip.

**4** 3:41-46 p.m. Two more 345-kilovolt lines trip within five minutes of each other; both are interconnected with neighboring grids.

**5** 4:10 p.m. Two 345-kilovolt lines in Michigan trip. The Campbell No. 3 coal-fired plant near Grand Haven, Mich. trips off. (Plant not shown on map.)

**6** 4:11 p.m. A coal-fired power plant in Avon Lake, Ohio trips.

**7** 4:11 p.m. The Davis-Besse nuclear plant trips.

**8** 4:11 p.m. The Perry Unit 1 nuclear reactor shuts down automatically after losing power.

**9** 4:17 p.m. The Enrico Fermi Nuclear plant loses power and shuts down automatically.