



## On guard against Electrical Blackouts

**A blinding flash!** A short circuit! The saboteur *thinks* his work is done . . . and it would be, but for the giant circuit breakers that stand guard over America's power lines.

For, without fast-acting circuit breakers, a short circuit in a substation would melt the power lines in an instant. Transformers and huge electric generators would be damaged or destroyed. Power would be disrupted for days or weeks. Vital war work would be brought to a standstill.

Recently, Westinghouse Research Engineers developed radically new types of circuit breakers. These improved devices break the circuit in a shorted power line at the incredible speed of *one twentieth of a second*.

Then a problem arose. How could Westinghouse scientists be *sure* these

new circuit breakers would cut off the power quickly enough . . . in the split second that spells the difference between protection and disaster?

**SOLUTION:** the mammoth Westinghouse High Power Laboratory where torrents of electric power . . . equivalent to the smashing force of 75,000 thunderbolts . . . are made to order.

Here, two 500-ton electric generators build up power of an instantaneous value of 2,000,000 kw. This surge lasts only a few seconds but, during that time, develops *twice the power* generated at Niagara Falls!

This terrific force is discharged into a new Westinghouse oil circuit breaker, to test its efficiency in protecting America's power systems. In a fraction of a second, the short circuit is blotted out

. . . with no harmful effect upon generators, transformers, or other electrical equipment.

Outdoor type air-blast circuit breakers are tested in insulated cells, at temperatures ranging to 20 degrees below zero. Although coated inch-deep in ice, these breakers operate perfectly under a flood of power 30 times greater than the normal power-line load.

Out of the Westinghouse High Power Laboratory have come many improvements in circuit breakers, giant fuses, and power switches . . . guardians of power lines against enemy sabotage, possible aerial bombing, and accidental short circuits.

Thus does Westinghouse "know how" help keep power flowing into America's mighty war industry upon which our very survival depends.



# Westinghouse

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, PITTSBURGH, PENNSYLVANIA • PLANTS IN 25 CITIES—OFFICES EVERYWHERE