

## EMERGENCY LIGHT SYSTEM

Reliable emergency lighting is a must for many public buildings and a valuable asset in homes. During power failures it can prevent panic, injuries and possible loss of life. The diagram, from a G-E data sheet on the C106 SCR, shows a simple automatic emergency lighting system.

The lamp is a type 1073 normally used in automobile back-up lights. It is powered by a 12-volt storage battery. When ac power is on, the 100- $\mu$ F capacitor is charged through D1 and R1. This places a negative voltage on the SCR gate and keeps it from conducting and lighting the lamp. The battery is

kept charged by rectifier D2.

When the ac power is interrupted, the capacitor discharges and the SCR is turned on by the positive gate voltage developed by current flow through R1, D1 and R3. Battery current flows through the lamp, the SCR and the transformer secondary. When ac power is restored, the capacitor recharges and turns off the SCR and lamp.

Current-limiting resistor R2 should be selected to limit the battery charging current to the required level. The battery rating should be adequate to power the 2-amp lamp at full brilliance for an adequate period of time. **R-E**

