

# Computer Models For Fire and Smoke

*Model Name:* MAGIC

*Very Short Description:* Two-zone model, able to handle up to 24 compartments.

*Modelers, Organization:* F.X. Rongere, P. Freydier, V. Cervantes, E. Chabert, Electricite de France

*References:* January 1992

*Availability:* HP 9000, Sun 4 workstation

*Hardware:* FORTRAN and C

*Size:* 2 MB

*Detailed Description:*

MAGIC is designed for nuclear power stations. The program includes natural and forced ventilation and treats radiation from flames and from walls, using an unsteady one-dimensional model for wall conduction. Outputs include smoke levels, temperatures of smoke and walls, oxygen and unburned species concentrations in smoke, and breakout of secondary fires.

MAGIC is being extended to include non-rectangular rooms, convex and sloping ceiling, rooms cluttered with objects, spread of fire through ventilation ducts, and extinction.