Computer Models
For
Fire and Smoke

Model Name:　　　　　　　EXITT

Version:　　　　　　　　　1.0

Classification:　　　　　　Egress model

Very Short Description:　　EXITT is a node-and-arc type egress model for residential applications. From user selected initial positions people move via the shortest path toward a goal. The unique part of EXITT is the behavioral rules that strongly affect actions and time needed to exit.

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User's Guide:　　　　　　　Documentation included in the HAZARD I package

Technical References:　　　Documentation included in the HAZARD I package

Validation References:　　　-----

Availability:　　　　　　　Distributed only as part of HAZARD I

Price:　　　　　　　　　　-----

Necessary Hardware:　　　see HAZARD I

Computer Language:　　　　Basic

Size:　　　　　　　　　　see HAZARD I

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Detailed Description:

EXITT's node-and-arc movement model and shortest path algorithm is typical for egress models. The unique part is the behavioral rules that were developed from interviews with survivors of fires recounting their actions. Actions are associated with family groups and include adult males investigating while adult females going to children, young children hiding and awaiting instructions. Investigation proceeds until an unambiguous confirmation of fire such as seeing the fire or smoke, or meeting a person who has, is received. Movement speed is affected by smoke density. These behaviors have a very significant impact on the time needed for safe egress and, as such, are an important factor in judging safety in residential fire scenarios.