|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | *Event 1 - Fire burns out at early stage* |  | *Event 2 - Sprinkler system activates* |  | *Probability of occupant becoming trapped* | |  | *Probability of occupant becoming harmed* | |
|  |  |  |  |  |  | **Pass** | **{{PASS1\_PD}}%** |  | **Pass** | **{{PASS2\_PD}}%** |
|  |  |  |  |  |  | **Fail** | **{{FAIL1\_PD}}%** |  | **Fail** | **{{FAIL2\_PD}}%** |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | **Yes (PS1)** |  | *{{PASS1\_PD}}* | *In Scenario* | | *{{PASS1\_PD}}* | *In Scenario* |
|  |  |  |  | **0.9** |  | **{{PASS1\_PD}}** | **Weighted** | | **{{PASS1\_PD}}** | **Weighted** |
|  |  | **No** |  |  |  |  |  |  |  |  |
|  |  | **0.4** |  |  |  |  |  |  |  |  |
|  |  |  |  | **No (PS2)** |  | *{{PASS1\_PD}}* | *In Scenario* | | *{{PASS1\_PD}}* | *In Scenario* |
| **Start** |  |  |  | **0.1** |  | **{{PASS1\_PD}}** | **Weighted** | | **{{PASS1\_PD}}** | **Weighted** |
| **1** |  |  |  |  |  |  |  |  |  |  |
|  |  | **Yes** |  | **N/A** |  |  |  |  |  |  |
|  |  | **0.6** |  |  |  | **{{PASS1\_PD}}** |  |  | **{{PASS1\_PD}}** |  |
|  |  |  |  |  |  |  |  |  |  |  |

Figure 1: Event Tree - Proposed Design

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  | *Event 1 - Fire burns out at early stage* |  | *Event 2 - Entrance Hall Door Left Open* |  | *Probability of occupant becoming trapped* | |  | *Probability of occupant becoming harmed* | |
|  |  |  |  |  |  | **Pass** | **78.1%** |  | **Pass** | **84.1%** |
|  |  |  |  |  |  | **Fail** | **21.9%** |  | **Fail** | **15.9%** |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | **Yes (CC1)** |  | *0.66* | *In Scenario* | | *0.66* | *In Scenario* |
|  |  |  |  | **0.6** |  | **0.16** | **Weighted** | | **0.16** |
|  |  | **No** |  |  |  |  |  |  |  |  |
|  |  | **0.4** |  |  |  |  |  |  |  |  |
|  |  |  |  | **No** |  | *0.37* | *In Scenario* | | *0.00* | *In Scenario* |
| **Start** |  |  |  | **0.4** |  | **0.06** | **Weighted** | | **0.00** |
| **1** |  |  |  |  |  |  |  |  |  |  |
|  |  | **Yes** |  | **N/A** |  |  |  |  |  |  |
|  |  | **0.6** |  |  |  | **0** |  |  | **0** |  |

Figure 2: Event Tree - Code Compliant Design

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **CC1** | **CC2** | **PD1** | **PD2** |
| **Pre-Movement Time** |  |  |  |  |
| **Occupancy Visibility Failure Criteria** |  |  |  |  |
| **Occupant Starting Position** |  |  |  |  |