MARSH BLAST POWERED BY MAXLOSS©

Marsh BLAST powered by MaxLoss© is a cutting edge software tool for modelling insurance losses associated with vapour cloud explosions (VCEs). The software has been developed in collaboration with leading engineering consultants Baker Engineering and Risk Consultants Inc. (BakerRisk) and, for the first time in the insurance industry, employs the advanced Baker-Strehlow-Tang (BST) explosion model.

Marsh BLAST models VCEs and estimates the maximum property damage value following an explosion. The software is predominantly used to calculate estimated maximum loss (EML) values for onshore energy installations as part of the insurance evaluation process.

The use of congestion-based explosion modelling for insurance loss assessment purposes was pioneered by Marsh in the early 1990s; the retiring software, SLAM, will be succeeded by Marsh BLAST.

Many firms in the energy insurance industry still use TNT-based models to estimate losses from VCEs. However, these explosion models do not take into account the fact that hydrocarbon vapour must accumulate within a congested structure in order for a VCE to occur.

The BST explosion model used by Marsh BLAST takes into account congestion, confinement and fuel reactivity when modelling the explosion. Each of these inputs is a key parameter when determining the severity and impact of a VCE.

THE BST EXPLOSION MODEL

BST is an advanced explosion model developed by BakerRisk. It is used extensively across the energy industry for risk assessment purposes including facility siting studies and quantitative risk assessments. The implementation of BST in Marsh BLAST is the first time that the BST explosion model has been employed for insurance risk evaluation purposes.

CONGESTION IN PROCESS STRUCTURES

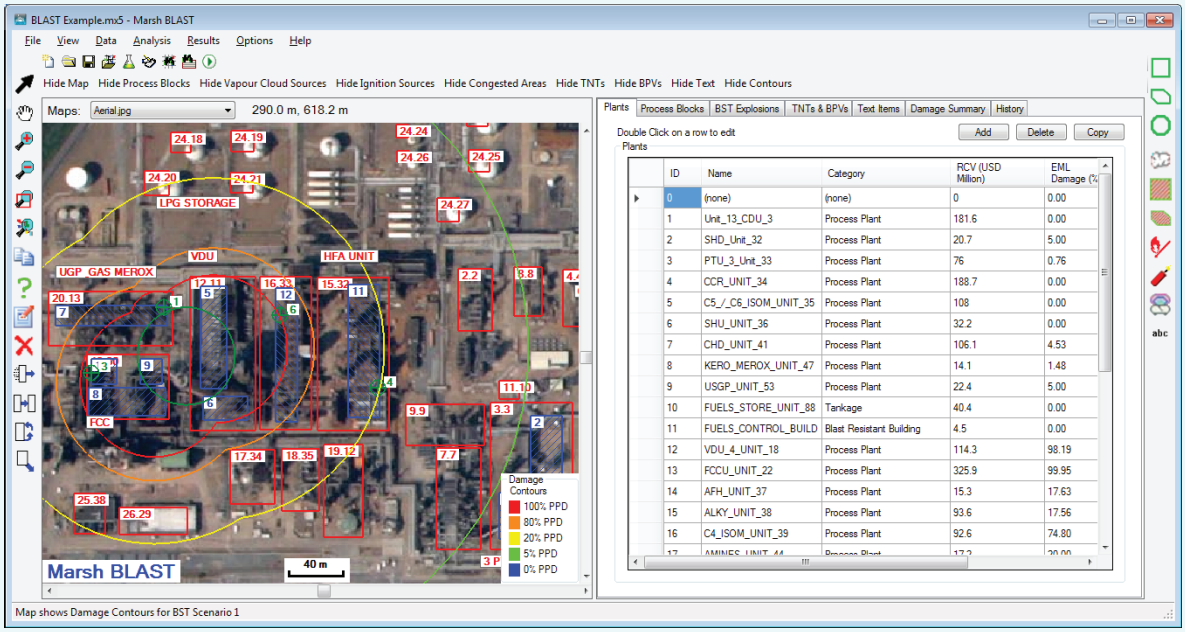
Congestion is a measure of how crowded a structure is with obstacles such as pipes, vessels and steelwork. The higher the congestion is within a structure, the more turbulence is generated as the explosion's flame front propagates through the structure. This in turn results in a more severe explosion for structures with higher congestion.

CONFINEMENT OF PROCESS STRUCTURES

Confinement is a measure of which physical barriers around a structure prevent an explosion's flame front from freely expanding. In structures with significant confinement, there are obstructions in place that would prevent a flame front from leaving the structure in a specific direction. This restriction in movement of the flame front causes a more severe explosion in structures with higher confinement.

FUEL REACTIVITY

Fuel reactivity is a measure of the propensity for a flame to accelerate through a given fuel-air mixture. The degree of reactivity for a given fuel is inferred from the laminar burning velocity for that fuel. The higher a fuel's reactivity is, the higher the combustion rate is, and consequently the more severe the resultant explosion becomes.



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