

A REVIEW OF COMPUTER MODELS TO AID THE DESIGN AND ASSESSMENT OF IM PERFORMANCE

ABSTRACT

Nine permanent members of seven nations contributed to the progress of the group. In total eight meetings were arranged. During the meetings several visits to local facilities and test centres were organised; sometimes live IM tests could be witnessed. Each participating company presented its own methodology for IM scenario simulation. The product portfolios of the participating companies cover a broad field from igniters, shells, safety and arm units, warheads to missiles and also packaging. The IM threats for these various products are not all of equal significance and therefore most companies have put their own specific emphasis on different computer models. In this way the participants learned that for example thermal threats specifications can be met easier for warheads - existing mitigation devices can be integrated to guarantee moderate reactions. On the other hand, the propellant of missiles is very sensitive to elevated temperatures and can react very violently after decomposition started. Simulation of the Slow Cook Off aggression for energetic materials requires therefore good understanding of reaction kinetics.