

## THE USE OF FUEL-AIR EXPLOSIVES AS A NUCLEAR BLASTWAVE SIMULATOR

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A test facility has been developed for disseminating fuel into 9.1-meter diameter hemispherical FAE clouds and is being used to investigate the sensibility of a large-scale blast simulator for simulating the blast from a 1 kt nuclear explosion. The measured blast waveforms were scaled and compared with blast waveforms from a 1 kt nuclear event. Scaling investigations indicate that the full scale facility would require a hemispherical FAE cloud, 160 meters in diameter, formed from  $9 \times 10^1$  kg of fuel. The proposed method for disseminating fuel into such a cloud involves the use of gas generators to force the fuel through a central cluster of nozzle heads. In order to demonstrate that stream heights of 80 meters are attainable by this method, a series of single nozzle stream height experiments were performed which relate stream reach to fuel properties, nozzle characteristics and driving pressures. Results from the single nozzle reach experiments are also presented. The results obtained thus far indicate that the proposed method for disseminating fuel looks quite promising for a full-scale, permanent blast simulator for simulating 1 kt nuclear blastwaves.