

## **Modification of the Defense Land Fallout Interpretive Code (DELFIIC) for Urban Detonations**

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A study of DELFIIC's soil activation, size distribution, and fractionation models was conducted. New soil composition data and new subroutines were added to allow the modeling of urban soil composition. Neutron activation of soil was updated with data from the ORIGEN-S code, based on ENDF/B-VII data. In addition, preexisting flaws in DELFIIC's decay engine and induced soil activity calculator were detected and repaired. Trial simulations were compared against simulations with soil data for the Nevada Test Site to gauge the effect of the urban soil data on DELFIIC's results. Potential limitations were identified based on simulations.