

COMBATting EMERGING BIOLOGICAL THREATS – PREPARING FOR THE FUTURE TODAY

Littoral River Test Planning Tool

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The Littoral River Test Planning Tool (LRTT) is a test planning tool that simulates the dispersion of chemical and biological simulant for the purpose of planning an outdoor littoral range release by using the Los Alamos National Laboratory's Quick Urban and Industrial Complex (QUIC). A data collection period with weather stations out on the range will collect data to determine the characteristic properties of along-wind velocity, the variance of the along-wind velocity, and the directional ambient turbulence at the release height. Collected range data combined with topological maps will be used to model changes in the Sea Surface Temperature (SST) and the littoral air temperature over the course of the day. QUIC will be run iteratively using the predicted weather conditions for future dates to determine if the sensor systems receives the required amount of agent and if the simulated trial contains the dispersion inside the littoral zone properly. Trials with safety failures will be avoided, and the input conditions will be optimized to maximize the number of releases that can be conducted with a >95% chance the actual release gives a concentration profile of exposure to the detector in between the minimum and maximum value needed to assess the system. The LRTT will fix these parameters as a constant and provide the user with a scorecard in which they can record all the possible conditions expected to occur that day and assign a color based on the probability of that set of conditions provides the needed data. This will allow for the final judgment of conducting a release to come down to checking the current wind speed and direction and waiting for the values to fall in the window of opportunity.