Air Resources Laboratory
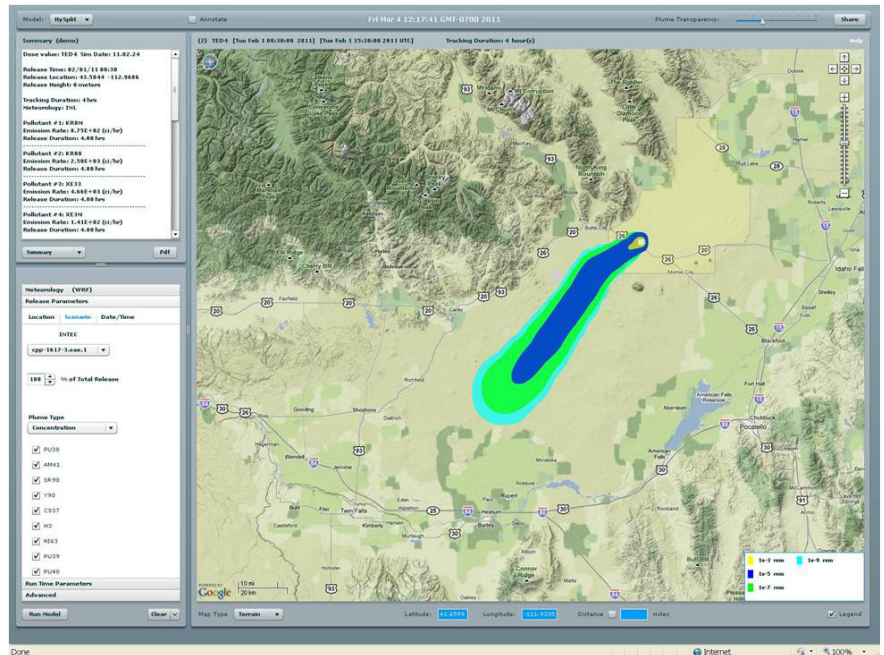## HYSPLIT Decision Support Tool (HDST)

What It Is

The HYSPLIT Decision Support Tool (HDST) is a new user interface for the existing ARL HYSPLIT dispersion model. It extends the current HYSPLIT modeling capabilities and provides a dynamic web-based graphical user interface for displaying the results. Model output is displayed using Google Maps, which gives users great flexibility in adjusting the output to meet their needs. The tool can run either a dispersion analysis based on meteorological observations or a forecast based on the output of numerical weather prediction models. Users also have access to predefined release scenarios to streamline the creation of output in emergency situations.

What It Is Used For

The HDST was originally developed by the ARL Field Research Division (FRD) to provide meteorological and dispersion modeling support for the Department of Energy's Idaho National Laboratory (INL). It is used by INL emergency managers to assess risks both during preparedness drills and actual emergencies involving chemical and radiological releases. Because of the success of HDST in its original application, components of the tool are now being adopted more broadly in ARL.

An example of the type of product that can be displayed with Google Map

Why It Is Important

This tool enhances ARL's dispersion modeling capabilities beyond what was previously available. Previous models, in use at the INL, had limited radiological capabilities. With the HDST we now have the ability to calculate dose and deposition from multiple radionuclides and do it directly in the model. This is important because it reduces the time to get results and reduces the possibility of calculation errors. HDST also provides options for generating either a dispersion analysis using observations or a forecast. Improvements to the mapping display have been added with the introduction of a Google Maps interface. This design provides a more flexible interface for entering model input parameters and for displaying the model output. It also provides dynamic rescaling and distance measuring capabilities. This allows emergency managers to better assess the impact of a radiological or chemical release, thus shortening the time needed to make life saving decisions.

For More Information:

Field Research Division
www.noaa.inel.gov/
Air Resources Laboratory
www.arl.noaa.gov