

Analysis and Atmospheric Transport Modeling for the National Data Center Preparedness Exercise 2012

For the NPE 2012 the trigger scenario was based on a selected seismic event from the Reviewed Event Bulletin serving as starting point for fictitious Radionuclide Dispersion. Hypothetical xenon and iodine radioisotope source terms with isotopic ratios fitting to a nuclear explosion were assumed. The simulated concentration at radionuclide stations of the International Monitoring System were calculated using the NOAA HYSPLIT model driven by NCEP GDAS analysis data with 0.5 degree horizontal resolution. Noble gas and particulate emissions were treated separately considering wet and dry deposition for the Iodine. Only stations which were operational and sending data in reality were taken for the creation of virtual samples according to the actual collection times. The actual meteorological conditions during the days following the NPE 2012 event and the location of the IMS stations lead to a detection pattern which allowed for sufficient backtracking results. The poster shows as well the exercise scenario as possible analysis solution considering as well radionuclide isotopic ratios for event dating and characterization as backward atmospheric transport modeling for localization. Those results build the connection to the waveform analysis and allow for an overall judgment on the chosen REB event.

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