

National Data Centre Preparedness Exercise NPE 2012 – Waveform Data Analysis Results

The National Data Centre Preparedness Exercises (NPE) simulate a fictitious violation of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and are conducted by NDCs for NDCs with the aim to increase the awareness and preparedness of their duties. These exercises are regularly performed with different scenarios. For the NPE 2012 a seismic event from REB was selected as an internal source of a fictitious release of iodine and radio-xenon. The exercise started with the notification of hypothetical radionuclide concentrations detected at IMS stations. The internal release scenario was kept undisclosed for participants. Therefore one main task of the exercise was the identification of the seismic source event. Atmospheric transport modeling in backward mode was required to confine the possible source region and find candidate waveform events from REB. The analysis of xenon isotopic ratios gives additional information about the event timing. Seismological characteristics of the remaining candidate events were investigated in detail and combined with associated infrasound detections to discriminate between natural seismic events and explosions. Spectral behaviors and source characteristics were compared for events from various clusters associated with mining activities, leading to conclusion that this event was an explosion.

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